

POOR LEGIBILITY

ONE OR MORE PAGES IN THIS DOCUMENT ARE DIFFICULT TO READ
DUE TO THE QUALITY OF THE ORIGINAL

Holland & Knight

SFUND RECORDS CTR
2194013

2099 Pennsylvania Avenue, N.W., Suite 100 | Washington, DC 20006 | T 202.955.3000 | F 202.955.5564
Holland & Knight LLP | www.hklaw.com

Bonni F. Kaufman
202.419.2547
bonni.kaufman@hklaw.com

October 8, 2009

VIA OVERNIGHT MAIL

Ms. Kathleen Salyer
Branch Chief
U.S. Environmental Protection Agency, Region 9
75 Hawthorn Street, M/C SFD-1
San Francisco, CA 94104

Re: Omega Site/Dice Road Facility

Dear Ms. Salyer:

I am writing this letter on behalf of BASF Corporation, a member of the Omega Chemical PRP Group ("OPOG"), to bring certain information to your attention regarding the Remedial Investigation Report for OU2 at the Omega Chemical Corporation Superfund Site ("Omega Site").

The March 2009 RI Report for OU2 has identified several potential sources of chlorinated solvent contamination downgradient from the Omega Site, which may be contributing to the "Omega plume". One of the sources identified is "Site B, 8921 Dice Road, Santa Fe Springs" (hereinafter referred to as "Dice Road Site"). (*See page 5-19 of the RI Report.*) The facility located at Site B was at one time owned and operated by BASF and its predecessors, although it was acquired by Diversey, an unrelated company, in 1980. BASF had very little information regarding the operation of this plant in its possession and after its review of the RI Report, we requested all relevant files about the Dice Road Site from the California Department of Toxic Substances Control and the Regional Water Quality Control Board in Los Angeles, as well as EPA. The information we received from the agencies demonstrates that chlorinated solvents, such as TCE and PCE, were previously investigated at the Dice Road Site and it was determined that they were not released or discharged into ground water under the Site. In fact, the California Regional Water Quality Control Board issued a No Further Action letter to Diversey Corporation in 1998, after extensive investigation, finding that "the site does not appear to be a source for the chlorinated VOC's in the groundwater."

This letter describes the history of operations, environmental investigations and regulatory action occurring at the Dice Road Site, attaching all of the key documents that we

have located. As we discuss below, we believe that the enclosed information rules out the Dice Road Site as a contributor to the Omega plume and that this information should be included in a revision to the RI Report.

I. USEPA's Remedial Investigation Report for the Omega Site

Section 5.5.3 of the RI Report identifies "Other Sites", including "Site B, 8921 Dice Road, Santa Fe Springs." It provides the following information about the Dice Road Site: From 1954 to 1974, sodium hydroxide, sodium carbonate, phosphoric acid and small amounts of ethyl and isopropyl alcohol were disposed of by injection wells onsite. During that time, the site was used for the manufacture of industrial detergents, liquid cleaning compounds, insecticides and antifreeze.

Various chlorinated solvents were found in groundwater under the Dice Road Site. These solvents consist of TCE and PCE and their sister or daughter products, including 1,1-DCE; cis-1,2-DCE; 1,1,1-TCA, as well as Freon 11. The RI Report concludes that "the presence of 1,1,1-TCA and other VOCs indicate that Site B is a possible source of 1,1,1-TCA, PCE, TCE, 1,2-dichloropropane, 1,1-DA, 1,1-DCE, and cis-1,2- DCE contamination. (*See R.I. Report at page 5-20.*)

II. Summary of Information Obtained from EPA and State Agencies

The Dice Road Site was owned and operated by BASF or its corporate predecessors from 1950 until approximately 1980. *Exhibit A, May 2008 BASF 104(e) Response.* The Site was used for the manufacture of cleaning products, including industrial detergents, whose principal ingredients were soda ash, phosphates, caustic and silicates. *See Exhibit B, June 29, 1972 letter from Richard Morrow to Sanitation District of Los Angeles.* It appears that as of 1954, seepage pits and injection wells were used for disposal of liquid waste from the facility. *See Exhibit C, Aug. 23, 1954 letter to Burke-Howard, from John L. Partin re: Wyandotte Chemical Corp.; Exhibit D, May 23, 1997 letter to Chris Bovaird from Richard E. Freudenberger; Ex. E, March 28, 1996 letter to Mr. Douglas Love from Steven M. Ranger, P.E.* During the period of 1953 to 1974 approximately 15 shallow pits or wells (40 ft.) were used on the property for wastewater disposal. Waste solutions containing sodium hydroxide, sodium carbonate, phosphoric acid, and various vessel washings were injected into these wells. Wells were sealed in 1974 by paving over with a parking lot. *See Exhibit A, last page, June 12, 1981 EPA Notification of Hazardous Waste Site completed and filed by Diversey Wyandotte Corporation.*

The plant was sold to Diversey Wyandotte Corporation ("Diversey") in 1980. *Exhibit A, at page 1 of 6.* From 1979 to 1992 Diversey, later doing business as Rathon Corporation (collectively "Diversey"), operated the property. *Exhibit F, Nov. 4, 1997 ESC Additional Investigation Report, Prepared for Regional Water Quality Control Board and Rathon Corp. at page 3.* In 1992, the facility was closed and Diversey subsequently entered into a voluntary cleanup agreement with the California Department of Toxic Substances Control (DTSC) for cleanup of soils impacted with kerosene, as a result of a kerosene spill. Kerosene had been used

to fuel the on-site detergent manufacturing process. *See Ex. G, Phase I Environmental Assessment Report, May 1998 (portions only).*

A. Chlorinated Solvent Use

The records we obtained indicate that the only chlorinated solvents or hydrocarbons that may have been used at the facility were methylene chloride, which was present in two cleaning products that were manufactured prior to 1971 and "chlorinated cleaners" for the dairy industry. *See Ex. B.* Based on an Amended Closure Plan submitted to the California Department of Health Services, the plant also shipped some solid chlorinated products offsite for disposal. *See Ex. H, Diversey Wyandotte Corp., Amended Closure Plan, Kleinfelder, Nov. 1989.*

B. Early Environmental Investigations

In December 1989, Thorne Environmental Inc. prepared a Groundwater Assessment and Vapor Extraction Feasibility Study for Diversey to address kerosene contamination in a concrete sump area of the facility. *See Ex. I.* Soil sampling results indicated that kerosene and several semi-volatile organic compounds were present in soils beneath the concrete sump, at a depth of 5 to 45 feet bgs. Volatile organic compounds and halogenated solvents were also detected in the groundwater, including TCE, PCE and 1,2-dichloropropane. The report noted that the property was located in a heavily industrialized area "that has been degraded by years of industrial activity." *Ex. I at p. 5.* The Report added that "detected constituents in the groundwater beneath the site may be a part of the background groundwater quality in the area." *Id.*

In 1991, Diversey retained EMCON to delineate the vertical and areal extent of kerosene-impacted soils in the vicinity of the dry sump. Based on high concentrations of TPH (as kerosene), EMCON recommended that a vapor extraction system be implemented in the dry sump area. EMCON prepared a workplan that was submitted to the Department of Toxic Substances Control in August 1995, but the work plan was not fully implemented. *See Ex. J, July 15, 1997 letter to Jim Ross, Site Cleanup Unit Chief, California Regional Water Quality Control Board from Richard E. Freudenberger, ESC.*

C. Environmental Strategies Corporation Investigations

In 1996, Diversey went through a significant restructuring and disposition of assets and subsequently changed its name to Rathon Corporation. Environmental Strategies Corporation ("ESC") was retained by Rathon Corporation (formerly Diversey Corp.) to voluntarily implement a program to remediate soils impacted with kerosene at the Dice Road Site. *Id.*

Because of a lack of groundwater data, ESC collected groundwater samples from the site in 1997. *Id.* Based on the presence of kerosene contamination, ESC commenced operation of an SVE system for kerosene remediation. *Id.* In addition, ESC's report indicated that groundwater samples previously collected in 1989 and 1996 contained several chlorinated organic compounds at levels exceeding their maximum contaminant levels (MCLs). ESC concluded that these

concentrations **"do not indicate a source area near the wells and appear to confirm that the VOCs have migrated beneath the former site from an upgradient source or sources."** *Id. at page 5.* To provide support for that conclusion, ESC conducted a database search and file review. It found several upgradient sources of solvents, including the Cal Western Paint Corporation and Western Screw Products, as well as the Pilot Chemical Company. (Pilot is upgradient from the Dice Road facility and is listed as a potential source in the RI Report, see page 5-14.) As a result, ESC did not recommend further investigation of groundwater. *Id. at page 6.*

In a letter dated May 23, 1997, ESC also informed Rathon Corporation that it had located archived records related to "seepage pits" on the site from the City of Santa Fe Springs Fire Department. *See Ex. D.* The records were related to the County's approval of the installation of seepage systems that were used for wastewater disposal at the plant from 1954 through 1970. ESC concluded, that based on these documents, "it appears that seepage pit systems, not 'injection wells', were constructed on the property." ESC emphasized that "this distinction is important because as you know, injection wells generally introduce effluent into the aquifer adjacent to the screened interval of the well while seepage pits are usually constructed with fine and coarse gravels encased in brick and are generally installed above the groundwater table and include a septic system or clarifier before the pits receive any effluent." *Id. at page 2.*

ESC added that the use of methylene chloride before 1971 at the plant was not a constituent of concern in the regional groundwater contamination and "is highly biodegradable, which means even if [it] had been released, it would have degraded by now. Since no other chlorinated hydrocarbons are known to have been used at the plant, it is unlikely that the seepage pit systems contributed to the area wide groundwater problem and there is no evidence to indicate the continuing existence of the seepage pit systems." *Id. at page 2.*

On September 23, 1997, ESC, on behalf of Rathon, agreed with the Los Angeles Regional Water Quality Control Board to conduct an additional investigation at the Site. *See Ex. K, Sept. 23, 1997 letter to Ms. Jenny Au from R. Freudenberg (ESC).* The investigation would consist of a soil gas survey to evaluate potential sources for chlorinated volatile organic compounds in soils at the Site and the sampling of existing groundwater monitoring wells to continue to evaluate the extent of VOCs in groundwater. *Id. See also Ex. K, last page, 9/17/97 Memorandum to File from Jenny Au ("ESC claims that chlorinated VOCs detected in gw is from an off-site source. However, the soil at the site has not been tested for VOCs. Also chemicals used at the site in the manufacturing process were stored in powder forms").*

The report of the additional investigation was submitted by ESC on November 4, 1997. *See Ex. F.* It found that chlorinated VOC concentrations from the soil gas survey and soils samples were very low and not indicative of a source near the groundwater monitoring wells. *Id. at page 13.* The report concluded that the site was not a source of the chlorinated VOC groundwater contamination and that the groundwater contamination appears to an area-wide problem that has migrated beneath the site.

On March 27, 1998, ESC submitted additional information requested by the Regional Water Quality Control Board with respect to chlorinated VOCs at the Site. *See Ex. L, Mar. 27, 1998 letter to Jenny Au from ESC (last page missing)*. ESC searched for documents to locate information describing any past environmental assessments for the facility and conducted a file review at DTSC Region III to determine if operations at the adjacent Philbro-Tech Inc. (PTI) facility may have impacted groundwater beneath the Diversey facility. ESC located the following reports and information:

- May 7, 1991 EMCON site assessment report in response to a kerosene pipeline leak
- Sept. 1991 Kleinfelder, Inc. report regarding closure and relocation of hazardous waste storage area; and
- July 8, 1994 DTSC Memorandum confirming the closure of Diversey as a RCRA-regulated hazardous waste management facility.

Id.

In addition, ESC reviewed the files for the PTI facility at DTSC. (The PTI facility is identified as a chlorinated VOCs source area in the RI Report. (*See R.I. Report at pages 5-12- 5-13.*)) These files showed that chlorinated VOCs were released on the PTI property and affecting groundwater quality beneath the PTI site and the former Diversey site. ESC found, on the basis of several sampling reports and investigations, that the groundwater gradient beneath the PTI property flows in a south-southwesterly direction and the Diversey Corp facility is located downgradient of the PTI facility. Based on the information provided, ESC concluded that PTI operations have potentially impacted groundwater quality beneath the former Diversey site. *Id.*

On September 11, 1998, ESC submitted a supplemental soil investigation at the facility because buildings at the site were demolished and foundations removed. *See Ex. M, Sept. 11, 1998 letter to Jenny Au from ESC (last page missing)*. Upon removal of the foundations, ESC observed saturated soil conditions adjacent to the former sump area. Chlorinated VOCs were not detected in the soil samples. The letter concludes that "the data collected from the supplemental investigation verified previous sampling results that indicated that neither chlorinated VOCs and semivolatile VOCs were present in any significant concentrations and the petroleum hydrocarbons exists within the soil." *Id. at page 1.*

D. No Further Action Letter

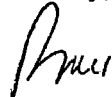
On September 23, 1998, J. E. Ross, P.E. Chief, Site Cleanup Unit; California Regional Water Quality Control Board sent a No Further Action letter to ESC stating that "**based upon the information submitted, we concur with your and SCS's findings that the site does not appear to be a source for the chlorinated VOC's in the groundwater. Therefore, we require no further action at this site with regards to the chlorinated VOCs identified in the groundwater.**" *See Ex. N, Sep. 23, 1998 letter to R. Freudenberger from J.E. Ross.*

III. Conclusion

As a result of our review of the EPA and California agency files, it is clear that the former BASF Dice Road Site was extensively investigated under the oversight of the Los Angeles Regional Water Quality Board. The Board required Diversy and its successor, Rathon, to conduct groundwater sampling and database searches to determine whether the Site was the source of chlorinated solvent contamination in regional groundwater. ESC Corporation, a well-known national consulting firm, conducted the sampling and determined that the site did not contribute chlorinated solvents, such as TCE and PCE and their daughter products to groundwater. As a result, the Board independently concluded that the site is "not a source for the chlorinated VOCs detected in the groundwater." In addition, EPA concurred in the RI Report that there are several upgradient sources of VOCs to the groundwater under and about the Dice Road Site.

Given these regulatory findings, BASF does not believe further investigation of the Dice Road Site is warranted. BASF is a participant in the OPOG in connection with a different BASF facility, and is happy to meet with EPA in connection with this letter or any other issues.

Sincerely,



Bonni F. Kaufman

cc: Lynda Deschambault (with enclosures)
Edward D. Modiano – OPOG Project Coordinator (with enclosures)
OPAG Steering Committee members (without enclosures)
Nan Bernardo, Esq. (BASF) (without enclosures)

Exhibit A



The Chemical Company

May 20, 2008

VIA FEDERAL EXPRESS #7927 0245 6680

Linda Ketellapper, SFD-7-5
U.S.E.P.A., Region IX
Superfund Division
75 Hawthorne Street
San Francisco, California 94105

Re: 104 (e) Request for Information - Omega Superfund Site
Real Property at 8921 Dice Road, Santa Fe Springs, CA

Ms. Ketellapper:

Enclosed please find BASF Corporation's response to the above referenced Request for Information.

If you have any questions regarding these responses, please contact me.

Sincerely,

A handwritten signature in cursive script that reads "Caroline S. Hudson".

Caroline S. Hudson
Superfund Paralegal

Enclosures

cc: Nan Bernardo, Esq. (w/o enc.)

**BASF Corporation's Responses to EPA Region 9
104(e) Request for Information - Omega Superfund Site
Real Property at 8921 Dice Road, Santa Fe Springs, CA
May 2008**

Preliminary Statement

Corporate History

On October 12, 1894, the Michigan Alkali Company (MI) was incorporated. On December 30, 1942 Michigan Alkali Company consolidated with J. B. Ford Company and became Wyandotte Chemicals Corporation (MI).

BASF Corporation (NY) was incorporated on June 1, 1957. On November 4, 1969 BASF AG acquired 98.5% of the stock of Wyandotte Chemicals Corporation. As of July 9, 1970 Wyandotte Chemicals Corporation became a wholly owned subsidiary of BASF Overzee N.V. On December 31, 1970, BASF Corporation (NY) merged into Wyandotte Chemicals Corporation. Simultaneous with the merger, Wyandotte Chemicals changed its name to BASF Wyandotte Corporation (MI).

In 1973, BASF Wyandotte Corporation was purchased by Luchem Corporation. Luchem name was changed to BASF America Corporation in 1978. In 1985, BASF America Corporation acquired Inmont Corporation from United Technologies Corporation. On December 31, 1985, BASF Wyandotte Corporation (MI), and four sister corporations, Glasurit America Inc., BASF Color Systems Corporation, Limbacher Paint & Color Works, Inc. and Badische Corporation were merged with and into Inmont Corporation and, simultaneously changed its name to BASF Corporation.

8921 Dice Road in Santa Fe Springs, California (the "Property")

On June 9, 1950 Wyandotte Chemicals Corporation purchased certain assets of Pacific Chemicals Company, a division of American Marietta Co. These assets, which included the plant on 8921 Dice Road in Santa Fe Springs, California (the "Property") became part of the Chemical Specialties Business, of the J.B. Ford Division of Wyandotte Chemicals Corporation.

On April 1, 1980 Molson Companies Limited, through a subsidiary, acquired the Chemicals Specialties Business of BASF Wyandotte Corporation, and operated under the name of Diversey Wyandotte Corporation. As such, BASF has had no involvement with the Property or its business operations for almost 30 years. It is assumed that the historic operating information and documentation was left at the Property when the business was sold.

A Plot Plan of the Property dated 3/21/63 with an aerial photograph of the Property is numbered BASF Dice Road 001 to 002 and attached as Exhibit A. A second Plot Plan dated 8/31/79 is numbered BASF Dice Road 003 and attached as Exhibit B.

During its thorough investigation BASF discovered that documents, as defined in "Definitions" specifically relating to the Property were very limited. BASF is producing the relevant documents.

**BASF Corporation's Responses to EPA Region 9
104(e) Request for Information - Omega Superfund Site
Real Property at 8921 Dice Road, Santa Fe Springs, CA
May 2008**

BASF recognizes it has a continuing obligation to provide all relevant information. BASF is continuing its internal investigation, and will supplement these responses, if additional information becomes available.

ENCLOSURE B: QUESTIONS

1. State the full legal name, address, telephone number, position(s) held by and tenure of the individual(s) answering any of these questions on behalf of BASF Corporation and/or any of its predecessor or related entities including, but not limited to, BASF Wyandotte Corporation (f/k/a Wyandotte Chemicals Corporation), concerning the facility located at 8921 Dice Road, Santa Fe Springs, CA (the "Property"). This Information Request is not limited to BASF Wyandotte Corporation (f/k/a Wyandotte Chemicals Corporation), rather, it governs operations of any and all of BASF Corporation's related entities (i.e., subsidiaries) and names (i.e., fictitious business names, etc.) at the Property, regardless of the relationship or association between BASF and any other such name or entity.

Response to 1.

Caroline S. Hudson
Sr. Legal Assistant
BASF Corporation
100 Campus Drive
Florham Park, NJ 07932
973/245-6052

BASF conducted a thorough internal investigation for any and all documents, as that term is defined in the Definitions section of this Request for Information. The investigation for documents related to the Property expanded beyond BASF Wyandotte Corporation, to include, Wyandotte Chemicals Corporation and any and all of BASF Corporation's related entities (collectively "BASF") at the Property, regardless of the relationship or association between BASF and any other such name or entity.

2. Provide any and all information on the use or generation of trichloroethane (TCA) in any form, and during any period of time, at the Property. Provide all relevant documentation concerning such use.

Response to 2.

During its internal investigation BASF did not discover any documents specifically related to the use or generation of trichloroethane (TCA) in any form, and during any period of time, at the Property.

**BASF Corporation's Responses to EPA Region 9
104(e) Request for Information - Omega Superfund Site
Real Property at 8921 Dice Road, Santa Fe Springs, CA
May 2008**

BASF recognizes it has a continuing obligation to provide all relevant information. BASF is continuing its internal investigation, and will supplement these responses, if additional information becomes available.

3. Provide any and all information on the use or generation of 1,4 dioxane in any form, and during any period of time, at the Property. Provide all relevant documentation concerning such use.

Response to 3.

During its internal investigation BASF did not discover any documents specifically related to the use or generation of 1,4 dioxane in any form, and during any period of time, at the Property. .

BASF recognizes it has a continuing obligation to provide all relevant information. BASF is continuing its internal investigation, and will supplement these responses, if additional information becomes available.

4. Provide any and all information on the use or generation of trichloroethylene (TCE) in any form, and during any period of time, at the Property. Provide all relevant documentation concerning such use.

Response to 4.

During its internal investigation BASF did not discover any documents specifically related to the use or generation of trichloroethylene in any form, and during any period of time, at the Property. .

BASF recognizes it has a continuing obligation to provide all relevant information. BASF is continuing its internal investigation, and will supplement these responses, if additional information becomes available.

5. Provide any and all soil or groundwater investigation reports or results that were generated for the Property.

Response to 5.

During its internal investigation BASF did not discover any documents in its sole possession that are specifically related to the soil or groundwater reports or results that were generated for the Property. EPA produced as nexus information a copy of the December 1989 Groundwater Assessment and Vapor Extraction Feasibility Study

**BASF Corporation's Responses to EPA Region 9
104(e) Request for Information - Omega Superfund Site
Real Property at 8921 Dice Road, Santa Fe Springs, CA
May 2008**

of the Diversey Wyandotte Corporation in Santa Fe Springs, California prepared for Diversey Wyandotte Corporation by Thorne Environmental, Inc.

BASF recognizes it has a continuing obligation to provide all relevant information. BASF is continuing its internal investigation, and will supplement these responses, if additional information becomes available.

6. Provide any and all hazardous waste manifests, California liquid waste hauler records and/or any other record of disposal of any hazardous or liquid waste which in any way relates to the Property or your operations at the Property.

Response to 6.

During its internal investigation BASF did not discover any hazardous waste manifests, California liquid waste hauler records and/or any other record of disposal of any hazardous or liquid waste which in any way relates to the Property or your operations at the Property.

BASF is producing a relevant portion of a memo dated 3/31/93 from Ken Koneval, BASF Environmental Department entitled "Superfund." (numbered BASF Dice Road 004 to 006 and attached as Exhibit C) The internal information that was formally submitted to EPA is numbered BASF Dice Road 007 and is attached as Exhibit D.

BASF recognizes it has a continuing obligation to provide all relevant information. BASF is continuing its internal investigation, and will supplement these responses, if additional information becomes available.

7. Provide copies of all information and documentation related to approval of any remediation or cleanup activities conducted during your ownership or operations at the Property.

Response to 7.

During its internal investigation BASF did not discover any information or documentation related to approval of any remediation or cleanup activities conducted during your ownership or operations at the Property.

BASF recognizes it has a continuing obligation to provide all relevant information. BASF is continuing its internal investigation, and will supplement these responses, if additional information becomes available.

**BASF Corporation's Responses to EPA Region 9
104(e) Request for Information - Omega Superfund Site
Real Property at 8921 Dice Road, Santa Fe Springs, CA
May 2008**

8. Provide copies of all hazardous material business plans and chemical inventory forms (originals and updates) submitted to city, county and/or state agencies for the Property.

Response to 8.

During its internal investigation BASF did not discover any hazardous material business plans and chemical inventory forms (originals and updates) submitted to city, county and/or state agencies for the Property.

BASF recognizes it has a continuing obligation to provide all relevant information. BASF is continuing its internal investigation, and will supplement these responses, if additional information becomes available.

9. Provide a list of employees who had knowledge of the use and disposal of hazardous substances at the Property during the entire time period that BASF Corporation, or any of its predecessors, successors, subsidiaries, affiliates, contractors, trustees, assigns or agents, was associated with this facility. For each employee listed, provide the following information:
- a. The employee's full name;
 - b. The employee's current or last known address(es) and telephone number(s), including the last known date on which you believe each address and telephone number was current;
 - c. The employee's Social Security Number;
 - d. Identify the entire time period that the employee worked at the facility; and
 - e. The position(s) the employee held with each business entity during his or her entire period of employment at the facility and the year or years that the employee held each listed position.

Response to 9.a. through 9.e.

During its internal investigation BASF did not discover a list of employees who had knowledge of the use and disposal of hazardous substances at the Property during the entire time period that BASF Corporation, or any of its predecessors, successors,

**BASF Corporation's Responses to EPA Region 9
104(e) Request for Information - Omega Superfund Site
Real Property at 8921 Dice Road, Santa Fe Springs, CA
May 2008**

subsidiaries, affiliates, contractors, trustees, assigns or agents, was associated with this facility.

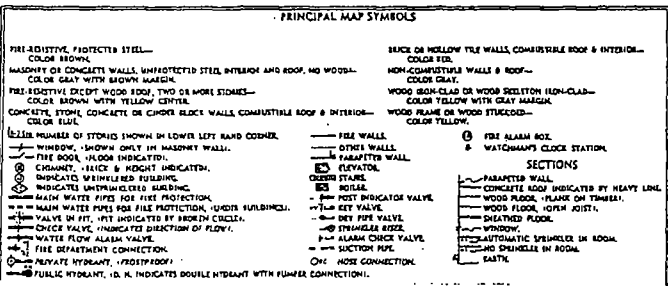
BASF recognizes it has a continuing obligation to provide all relevant information. BASF is continuing its internal investigation, and will supplement these responses, if additional information becomes available.

**BASF Corporation's Responses to EPA Region 9
104(e) Request for Information - Omega Superfund Site
Real Property at 8921 Dice Road, Santa Fe Springs, CA
May 2008**

Exhibit A

THIS PLAN SHOULD BE
MADE AVAILABLE ONLY TO
AUTHORIZED PERSONS

THIS PLAN SHOULD BE
MADE AVAILABLE ONLY TO
AUTHORIZED PERSONS



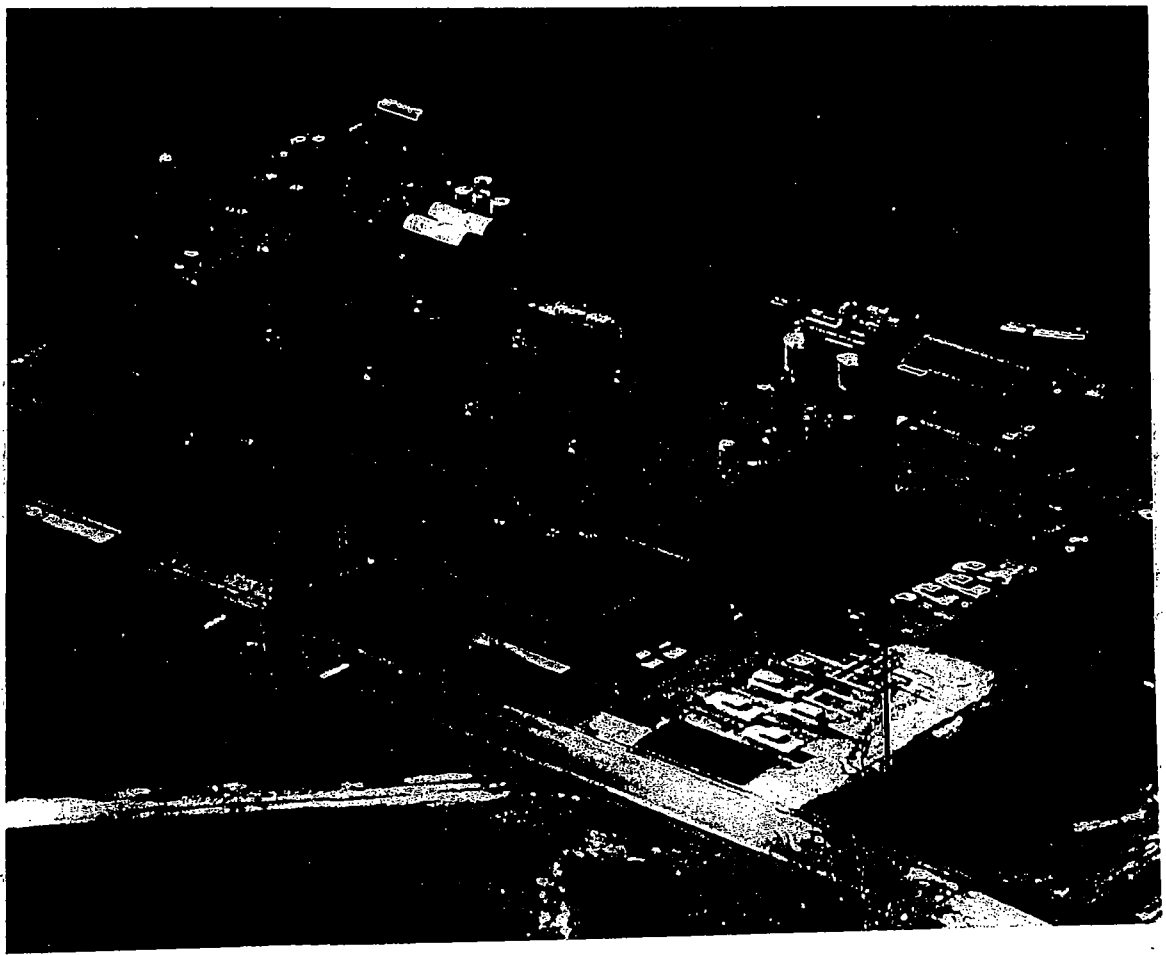
R D.

WYANDOTTE CHEMICALS CORPORATION
LOS NIETOS, CALIFORNIA

BASF Dice Rd 001

MARCH 21 ST, 1962

1877



**BASF Corporation's Responses to EPA Region 9
104(e) Request for Information - Omega Superfund Site
Real Property at 8921 Dice Road, Santa Fe Springs, CA
May 2008**

Exhibit B



**BASF Corporation's Responses to EPA Region 9
104(e) Request for Information - Omega Superfund Site
Real Property at 8921 Dice Road, Santa Fe Springs, CA
May 2008**

Exhibit C

Interoffice

BASF

Date March 31, 1993
To P. Arvidson
From/Unit K. Koneval
Location/Extension 8 Campus Drive/4559
Subject **SUPERFUND FILE**
Copies D. Webster (w/encl)

Enclosed herein are the original copies of BASF Wyandotte Corporation's filing under Public Law 96-510, Superfund (Section 103 (c) of the Comprehensive Environmental Response and Liability Act of 1980). I recommend saving these forever and keeping them in the General Section of the Special Projects files.

Ken/tn

Ken

KCK:tn

Enclosure

Arvidson.Sup

BASF Dice Rd 004

SUPERFUND REPORT

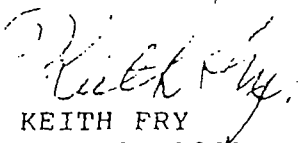
We have completed the review of presently and formerly owned sites and determined which sites must be reported to EPA under the Superfund [(Section 103(c) of the Comprehensive Environmental Response and Liability Act of 1980)]. This report was filed on June 9, 1981. The sites reported were:

Presently Owned

Formerly Owned

Santa Fe Springs, California

The report, complete with back-up information, will be given to Bob Thoma for his reference. Each General Manager and Site Manager will be provided a copy of the information relating to his business or plant for the record. Each site reviewed the submission before being mailed to EPA.


KEITH FRY
June 9, 1981

Santa Fe Springs, Cal. *

Wyandotte Chemicals Corporation purchased Pacific Chemical, a privately owned compounder of cleaning chemicals. This operation was situated in a leased building in Los Angeles, and was moved to Santa Fe Springs on June 12, 1950.

During the period of 1953 to 1974, approximately 15 shallow wells (40 ft.) were used on the Santa Fe Springs property for disposal. Waste solutions containing sodium hydroxide, sodium carbonate, phosphoric acid, and various vessel washings were injected into these wells. Operation occurred 5 days/week and volume only amounted to an average of 200 gal/day. Wells in 1974 were sealed by paving over with a parking lot. On site treatment consisted of neutralization of process waste water. Small quantities of hazardous wastes were occasionally at the plant for off-site disposal.

This plant was sold to Diversey Wyandotte Corporation in 1979. (Data provided by R. Morrow, Plant Manager).

BASF Wyandotte Corporation
Santa Fe Springs, California

BWC should conclude, based on personnel recollection and an examination of reasonably available records that this site may pose a slight hazard to the environment. It is unlikely to warrant or require government attention or response. However, due to the corrosive nature of some of the wastes disposed on site, this location is subject to section 103(c) notification under Superfund.

**BASF Corporation's Responses to EPA Region 9
104(e) Request for Information - Omega Superfund Site
Real Property at 8921 Dice Road, Santa Fe Springs, CA
May 2008**

Exhibit D

EPA Notification of Hazardous Waste Site

United States
Environmental Protection
Agency
Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

1 Person Required to Notify:

Enter the name and address of the person or organization required to notify.

Name BASF Wyandotte Corporation
Street P. O. Box 181
City Parsippany, State N.J. Zip Code 07054

2 Site Location:

Enter the common name (if known) and actual location of the site.

Name of Site (Former) BASF Wyandotte Corporation
Street _____
City Santa Fe Springs County Los Angeles State CA Zip Code _____

3 Person to Contact:

Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title) Kraemer, Wm., Mgr., Corp. Env. Protection
Phone (201) 263-5310

4 Dates of Waste Handling:

Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year) 1953 To (Year) 1974

5 Waste Type

During the period of 1953 to 1974 approximately 15 shallow wells (40 ft.) were used on the Santa Fe Springs property for disposal. Waste solutions containing sodium hydroxide, sodium carbonate, phosphoric acid, and various vessel washings were injected into these wells. Some neutralization would have taken place in the underground. Operation occurred 5 days/week and volume only amounted to an average of 200 gal/day. Wells in 1974 were sealed by paving over with a parking lot.

This plant was sold to Diversey Wyandotte Corporation in 1979.

From: Origin ID: LKKA (973)246-6051
 Jeanne M. Hahn
 BASF CORPORATION
 100 Park Avenue
 S-3542
 Florham Park, NJ 07932



CLB1287072122

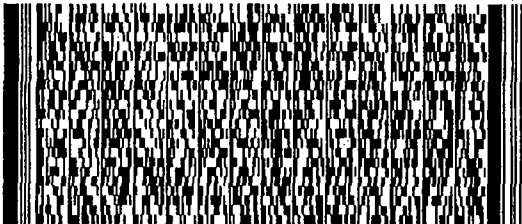
Ship Date: 20MAY08
 ActWgt: 1 LB
 System#: 4688963/INET8010
 Account#: S *****

Delivery Address Bar Code



Ref # Omega Superfund Site
 Invoice #
 PO #
 Dept #

SHIP TO: 555-555-5555 **BILL SENDER**
Linda Ketellapper
US EPA, Region IX
Superfund Division
75 Hawthorne Street
San Francisco, CA 94105

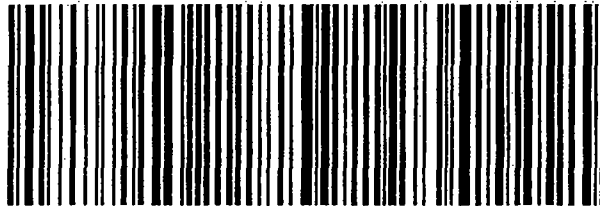


TRK# 7927 0245 6680
 0201

WED - 21MAY A1
STANDARD OVERNIGHT

XH JCCA

94105
CA-US
SFO



After printing this label:

1. Use the "Print" button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Exhibit B

BSF Wyandotte Corporation



8921 Dice Road
Santa Fe Springs, California

P.O. Box 2147
Los Nietos, California 90606

213 693-3711
213 723-4777 from Los Angeles

1972 JUN 30 AM 9 25

Pacific District Office

June 29, 1972

Iw. 152

Sanitation Districts of Los Angeles County

1020 Beverly Blvd.

Los Angeles, California 90057

John D. Parkhurst, Chief Engineer and General Manager

Gentlemen:

We have enclosed your Critical Parameter Report Form along with the Permit Application. The results shown are a composite picture of samples taken over two-eight hour periods, one on May 25, 1972 and the other, June 22, 1972.

As I discussed with your Mr. Richard Davis, our effluent will vary dependent of which of our 300 plus formulations which may be in production.

Our product line is essentially one of Cleaning Compounds sold to various industrial type users, primarily: laundries, restaurants, dairies, bottling plants, janitorial supply houses, aircraft and automotive plants, etc. The products are both liquid and dry. The principle ingredients are Soda Ash, Phosphates, Caustic and Silicates.

Our industrial waste water is the result of washing down the equipment between productions of the numerous products to eliminate the possibility of contamination. The liquid mixers are drained dry while the powder mixers are brushed or scraped clean. It is only this film of material that ends up in the waste water.

Admittedly, this is an oversimplification but is used to differentiate between our batch method of compounding versus the more complex continuous chemical processing.

We should expect our Ph to vary from 7 to 9 as the majority of our product line is alkaline.

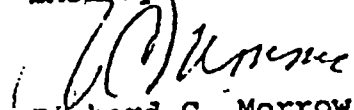
Your Parameter Form called for chlorinated hydrocarbons. Although we do have two products in our line using Methylene Chloride, neither product has been made since December, 1971.

PARKHURST	DEEKEN	DIEMER
LABRISON	DE PALMA	SCHULTZ
LESTER	LUNDIN	JEW
POSTHUMUS	WYANDOTTE	WYANDOTTE
HAAS	WYANDOTTE	WYANDOTTE

A review of our total water usage through our meter was 980,000 gallons in 1970 and 1,200,000 gallons in 1971. Conservatively, 35% of this amount would go into product.

I trust this brief review along with the specific information from your two forms will be adequate for you to process our application.

Very truly yours,
HASE Wyandotte Corporation


Richard C. Morrow
Plant Manager

RCM:bw
Enclosures

Exhibit C

cc
①
August 23, 1954

Burke-Howard
2436 No. Rosemead Boulevard
El Monte, California

Gentlemen:

Subject: Wyandotte Chemical Corporation
8920 So. Dice Road (File I-2112)

In accordance with your recent proposal we have approved the accompanying print of the Austin Company, Drawing No. LA 1080, Sheet M-1, showing seepage pits in lieu of leaching fields for disposal of liquid waste from subject plant, with the understanding that the operator will take such steps as are necessary to keep the waste water underground at all times, in accordance with provisions of Los Angeles County ordinances. This print supersedes prints approved February 17, 1954.

We will proceed with the necessary revision of the operator's industrial waste disposal permit.

We will forward prints of the above drawing to the Austin Company and interested County departments.

Yours very truly,

William J. Fox
COUNTY ENGINEER AND SURVEYOR

John L. Partin
Assistant Division Engineer
Industrial Waste Division

JLP-MGS:CM

cc: Austin Company
Wyandotte Chemical Corp.

LM

RAW

AGP, WC, MHB, RHM

Exhibit D



ENVIRONMENTAL STRATEGIES CORPORATION

101 Metro Drive • Suite 650 • San Jose, California 95110 • (408) 453-6100 • FAX (408) 453-0496

May 23, 1997

Mr. Chris Bovaird
Rathon Corporation
Scotia Plaza, 40 King Street West
Suite 3600, Toronto, Ontario M5H 3Z5

Re: Status of "Injection Wells" at the Former Diversey Facility in
Santa Fe Springs, California

Dear Chris:

Per your request on behalf of Rathon Corporation, Environmental Strategies Corporation (ESC) performed a file review to determine the disposition of "injection wells" at the former Diversey Corp. facility in Santa Fe Springs, California. ESC performed file reviews at the following regulatory agencies:

- City of Santa Fe Springs Fire Department
- Los Angeles County Department of Public Works
- Department of Toxic Substances Control
- Los Angeles County Sanitation District

The following documents are enclosed:

- Los Angeles County Industrial Waste Division Inspector's Report (May 12, 1954)
- Los Angeles County Industrial Waste Division Letter (August 23, 1954)
- Los Angeles County Industrial Waste Division Letter (August 27, 1954)
- BASF Critical Parameter Report (June 29, 1972)
- Plot Plan Figure (August 31, 1979)

ESC was able to locate archived records related to "seepage pits" from the City of Santa Fe Springs Fire Department. The enclosed supporting documents (August 23, 1954 and August 27, 1954 correspondence, and Inspector's Report) are related to the County's approval for the installation of seepage pit systems. The seepage pit systems were used for wastewater disposal at the plant from 1954 to about 1970. These records were not accompanied with enclosures or figures depicting the location and construction of the seepage pit systems. However, the enclosed figure found at the Department of Toxic Substances Control (DTSC) files suggest that the seepage pit systems were located within the south yard of the property.

Based on these documents, it appears that seepage pit systems, not "injection wells", were constructed on the property. This distinction is important because as you know, injection wells generally introduce effluent into the aquifer adjacent to the screened interval of the well while

seepage pits are usually constructed with fine and coarse gravels encased in brick and are generally installed above the groundwater table and include a septic system or clarifier before the pits receive any effluent.

The seepage pit systems on the former Diversey property were constructed and designed by the Austin Company in 1954. ESC has not been able to locate or contact the Austin Company. According to the June 29, 1972 letter (Critical Parameter Report), it appears that the seepage pits could possibly have been in operation up to about 1970 when the plant was connected to the public sewer. The June 29, 1972 letter also refers to the use of methylene chloride before 1971 at the plant. As you know, methylene chloride is not a constituent of concern in the regional groundwater contamination and is highly biodegradable, which means even if had been released, it would have degraded by now. Since no other chlorinated hydrocarbons are known to have been used at the plant, it is unlikely that the seepage pit systems contributed to the areawide groundwater problem and there is no evidence to indicate the continuing existence of the seepage pit systems. Therefore, there has been no discharge to the seepage pits in approximately 27 years.

In addition, according to the enclosed figure, one portion of the two seepage pit systems appears to be in the vicinity of the former aboveground kerosene storage tanks. Soils near the suspected location of the seepage pit system were previously remediated when the aboveground tanks were removed and closure was granted by the Los Angeles County Department of Health Services (DOHS). To our knowledge, no evidence of contamination related to the possible existence of seepage pits was discovered during this remediation.

In summary, we believe the former seepage pit systems pose no existing or future environmental concern due to their lack of use for over 25 years, their previous use as a permitted wastewater disposal system, the lack of any documentation or anecdotal information regarding historical plant use of chlorinated compounds currently found in the groundwater in the area of the plant, and the soil remediation that occurred in November 1990 near the area where one of the systems was apparently located.

If you have any questions or require additional information, please do not hesitate to call.

Sincerely yours,



Richard E. Freudenberger
Senior Vice President

REF:bbb:bl
2564.doc

Enclosures

cc: Ann Margaret Connoly, Weil Gotshal & Manges
Tom Dong, SCS Engineers

Exhibit E

Molson/Env/Sante Fe Springs



Diversey Corp.
12025 Tech Center Dr
Livonia MI 48150-2193

Tel 313 458 5000
Fax 313 458 3800

March 28, 1996

Mr. Douglas A. Love
Vice President, General Counsel and Secretary
The Molson Companies
Scotia Plaza, 40 King Street West
Suite 3600
Toronto, Ontario M5H 3Z5

Copy
(i) Jim Levy
(ii) Amemaynet Connolly

Subject: Additional Information on the Injection Wells at the Sante Fe Springs, CA Site

Dear Mr. Love:

It is my understanding that you and your office will now handle those issues associated with the Sante Fe Springs site. Accordingly, I am enclosing with this letter information that I have uncovered relative to the injection wells at the site and information pertaining to the removal of the site's underground storage tanks.

I have spoken with Mr. Don Bossow concerning the Sante Fe Springs site and his recollection of facts pertaining to the alleged injection wells formerly located and used at the subject site. Mr. Bossow indicated that to his knowledge, there were indeed several injection wells located at the site which were used by BASF Corporation from the 1950s through the early 1970s for the purpose of disposing of wastewaters generated by BASF's onsite operations. Mr. Bossow was not sure of the exact location of these injection wells, but he did indicate that the wells were located on property which was sold off a few years ago. As such, these former wells do not appear to be located on that tract of property which is currently up for sale.

In response to findings presented in the Preliminary Assessment report on the Diversey site conducted by the Department of Health Services in 1984 (the report referenced by the potential buyer's consultant (Mr. Brian Wynne, Dames & Moore, 909-980-4000) that addresses the injection wells), Diversey conducted an investigation in 1986 of that area of the site most likely to be impacted by the presence and use of the injection wells. I have included a copy of the report generated from that investigation for your reference and files. As indicated in that report, trace levels of contaminants (most notably chlorinated solvent constituents) were noted in groundwater samples collected.

According to Mr. Bossow, these results were shared with the Department of Health Services (DHS). Given the heavy industrial nature of the area around the plant, however, the DHS indicated to Mr. Bossow that the groundwater contamination issue was already known and was a

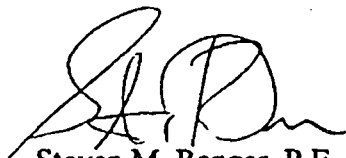
regional issue not considered to be attributable to Diversey's operations. As such, no further action relative to the injection wells was warranted by the DHS. Unfortunately, Mr. Bossow does not recall if the DHS indicated their opinion relative to the wells in writing.

Mr. Wynne of Dames & Moore also requested additional information on the removal of underground storage tanks at the Sante Fe Springs site, which I have included for your reference and files. Mr. Wynne was particularly interested to find out if contaminated soils from the underground storage tank removal activities were disposed of off-site or onsite. Based on the information I have found in our files and have provided here, the soils were apparently spread out onsite as opposed to being sent off-site for landfilling or similar disposal. According to Mr. Bossow, the soils were spread out on that area of the site which was later sold. Mr. Bossow further indicated that this area is now covered by both a building and a parking lot. Tests were conducted in the approximate area where the impacted soils were placed. In his letter, Mr. Bossow indicates that the results of the tests do not pose a health or environmental risk.

I hope this information is of use and helps to clarify the concerns of the potential buyer of the site. I have not distributed any of this new information to the buyer at this point. Given the changing responsibilities for these sites, perhaps the transmittal of this information to the potential buyer is best provided by your office.

As a personal note, perhaps you are aware that I have resigned from my position with Diversey Corporation effective March 31, 1996. Accordingly, if you need additional information regarding this site or any other site which we discussed during our meeting on March 7, please contact Mr. Jim Armstrong at 313-458-2541. I will be contacting Jim in the near future with a forwarding address and phone number where I can be reached if I can be any further help to you. It was a pleasure meeting you on March 7, and I wish you success in your handling of the environmental sites.

Sincerely,

A handwritten signature in dark ink, appearing to read 'S. M. Ranger', with a stylized flourish at the end.

Steven M. Ranger, P.E.
Manager, Health, Safety & Environment - Facilities

Exhibit F



ENVIRONMENTAL STRATEGIES CORPORATION

226 Airport Parkway • Suite 630 • San Jose, California 95110 • (408) 453-6100 • Fax (408) 453-0496

**ADDITIONAL INVESTIGATION REPORT
FORMER DIVERSEY CORP. FACILITY
8921 DICE ROAD
SANTA FE SPRINGS, CALIFORNIA**

**PREPARED FOR
REGIONAL WATER QUALITY CONTROL BOARD
AND
RATHON CORP.**

RECEIVED
97 NOV -5 11:10:15
REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

BY

ENVIRONMENTAL STRATEGIES CORPORATION

November 4, 1997

Contents

	Page
Executive Summary	1
Introduction	2
ESC's Previous Investigations and Remediation Activities	3
VOC Groundwater Review	5
Investigation Procedures	7
Soil Gas Sampling Procedures	7
Groundwater Sampling Procedures	8
Soil Sampling Procedures	9
Investigation Results	11
Soil Gas Sampling Results	11
Groundwater Sampling Results	13
Soil Sampling Results	
Summary and Conclusions	14

List of Figures:

- Figure 1 - Site Location
- Figure 2 - Site Plan
- Figure 3 - October 10, 1997 Investigation
- Figure 4 - Soil Gas Analytical Results
- Figure 5 - Groundwater Elevations

List of Tables:

- Table 1 - Groundwater analytical Results July 25, 1996
- Table 2 - Groundwater analytical Results July 28, 1997
- Table 3 - Summary of Groundwater Results
- Table 4 - Groundwater Elevation
- Table 5 - Summary of Soil Gas Results
- Table 6 - Groundwater Analytical Results October 9, 1997
- Table 7 - Groundwater Analytical Results October 9, 1997
- Table 8 - Soil Analytical Results October 10, 1997

List of Appendices:

- Appendix A - Summary of Previous Investigations
- Appendix B - Soil Gas Survey QA/QC

Contents Cont'd

Appendix C - Groundwater Sampling Logs

Appendix D - Chains-of-Custody

Appendix E - Laboratory Analytical Results

Executive Summary

At the request of the RWQCB, and on behalf of Rathon Corp., ESC, recently performed a soil and groundwater investigation at the former Diversey Corp. facility located at 8921 Dice Road in Santa Fe Springs, California. ESC conducted a soil gas survey, groundwater sampling, and soil sampling investigation. The investigation was conducted in order to determine (a) whether the site, including two suspected seepage pits, is a source of chlorinated VOCs in groundwater and (b) the effectiveness of an SVE remedial system installed at the site in April 1996. ESC collected a total of 20 soil gas samples, ranging in depth from five feet to fifteen feet bgs, groundwater samples from six monitoring and extraction wells, and soil samples from three potential source locations. The soil and groundwater samples were and submitted to the laboratory for analysis.

Based on our review of the data, the site is not a source of the chlorinated VOC groundwater contamination; the groundwater contamination appears to be an area-wide problem that has migrated beneath the site. As for the kerosene contamination, the SVE system is working effectively. In a limited area near a former concrete sump location, there remains a minor amount of residual kerosene contamination within the soils and groundwater.

Because of the residual kerosene impacted soils near the former concrete sump area, ESC will continue to operate the SVE system.

Introduction

This reports provides information regarding previous site investigations conducted by ESC and other environmental consultants as well as the recent investigation requested by the RWQCB and performed by ESC at the former Diversey plant located at 8921 Dice Road in Santa Fe Springs, California (Figure 1).

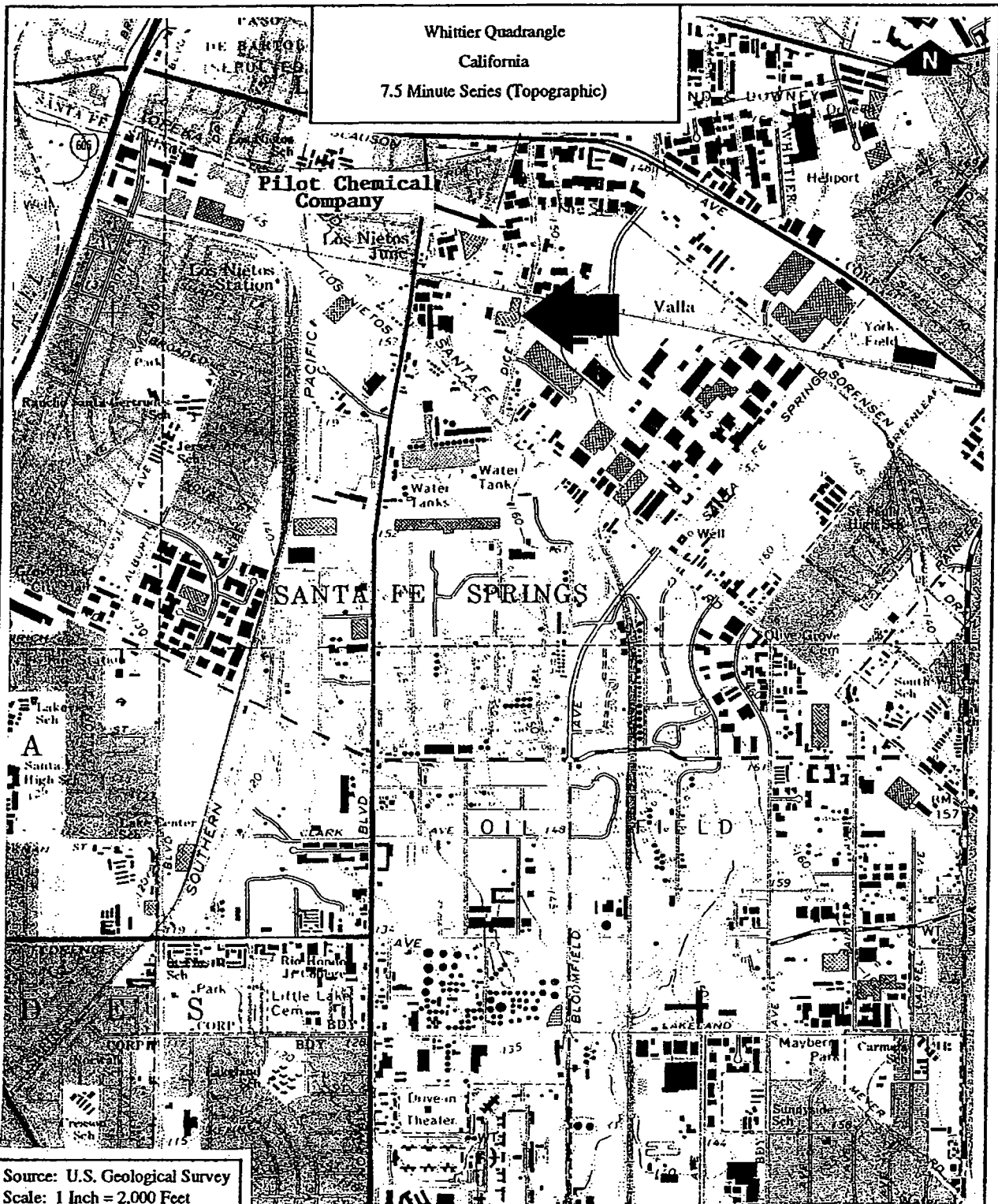
The site was operated from 1953 until 1979 by BASF and was mainly used to manufacture industrial detergent cleaners. Diversey acquired the facility, and from 1979 until 1992, also manufactured industrial cleaning products at the facility.

Kerosene was used at the site as a feedstock for the detergent manufacturing process and was stored at the site in both underground and aboveground tanks. The kerosene was pumped from the storage tanks and transported via pipelines to the manufacturing building (Figure 2). Analytical data collected from previous investigations suggest that the soil and groundwater beneath a former concrete sump area outside the southern wall of the facility have been impacted with kerosene. There are no other areas on the property that are known to have been environmentally impacted by the former operations of Diversey Corp. (now known as Rathon Corp.).

On April 9, 1997, ESC implemented a voluntary remediation program at the site that consists of a soil vapor extraction (SVE) system to remediate the kerosene impacted soils beneath the former concrete sump.

On September 12, 1997, ESC met with the RWQCB to discuss remediation goals and a schedule for obtaining regulatory closure for the site. Ms. Jenny Au of the RWQCB requested that ESC provide additional soil and groundwater quality information to assess the effectiveness of the voluntary remedial efforts.

On October 9 and 10, 1997, at the request of the Los Angeles Regional Water Quality Control Board (RWQCB), and on behalf of Rathon Corp., Environmental Strategies Corporation (ESC), performed a soil and groundwater investigation at the former Diversey Corp. facility.



ENVIRONMENTAL STRATEGIES CORPORATION
101 Metro Drive, Suite 650
San Jose, California 95110
(408) 453-6100

Figure 1
Site Location
Diversey Corporation
Santa Fe Springs, California

ESC's Previous Investigations and Remediation Activities

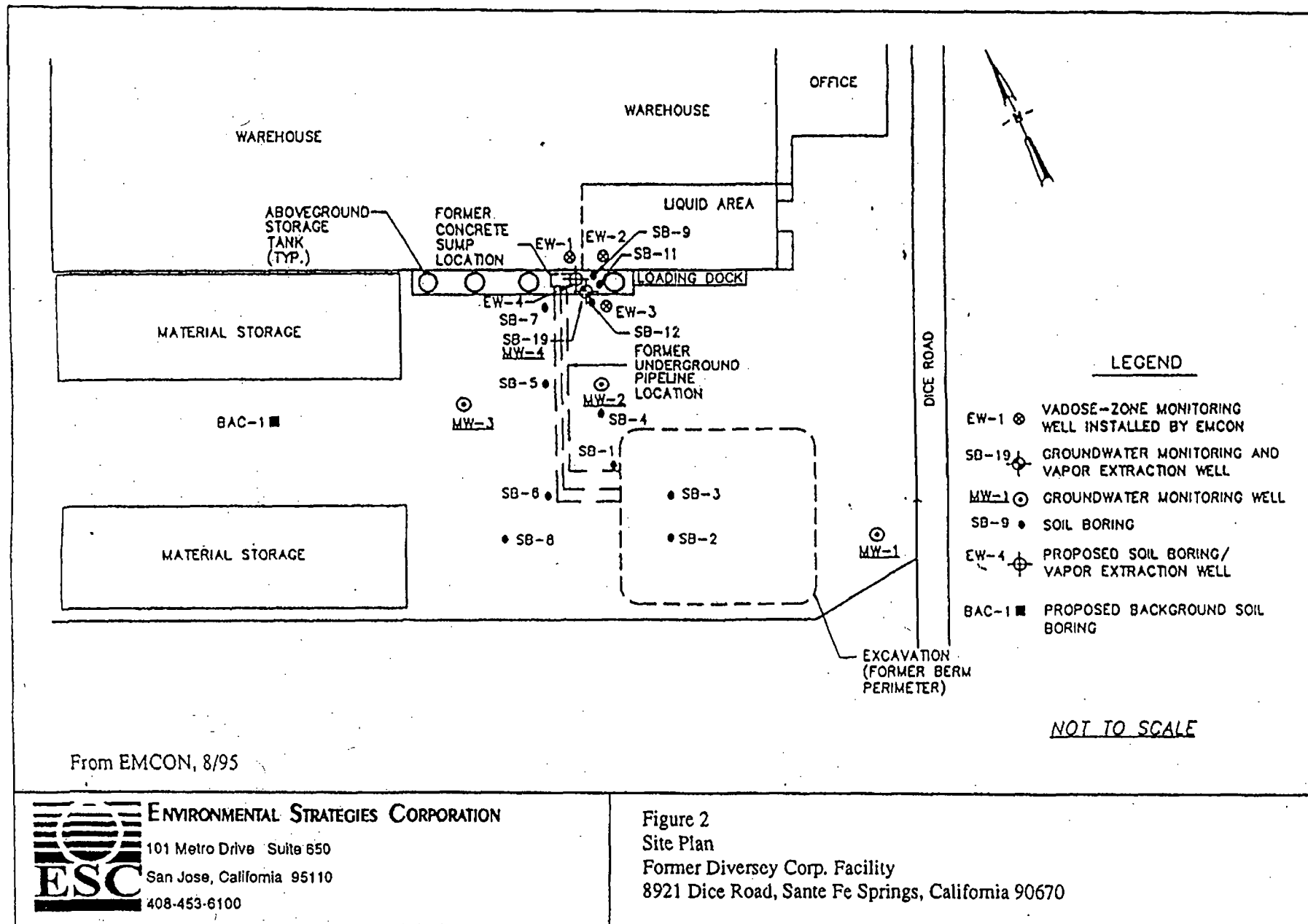
A number of consultants other than ESC have conducted investigations at the site as summarized in Appendix A. ESC's investigations are summarized below.

In 1996, Diversy went through a significant restructuring and subsequently changed its name to Rathon Corp. In September, 1996, Rathon voluntarily implemented a program to remediate the soils impacted with kerosene. Due to the lack of data regarding groundwater quality and water levels and to obtain a current assessment of the site, ESC collected groundwater samples and measured water levels from MW-2, MW-3, and MW-4 in July 1996. The well locations are shown on Figure 2. ESC was unable to locate MW-1, which may have been paved over. Groundwater samples were collected on July 25, 1996, and analyzed for TPH as kerosene, volatile organic compounds (VOCs), and polynuclear aromatic hydrocarbons (PAHs). The laboratory analytical results indicated that levels of VOCs were present in wells MW-2 through MW-4 at concentrations exceeding the State of California Maximum Contaminant Levels (MCLs). MW-4 contained free floating product that was determined to be kerosene. No PAHs were detected. Kerosene was detected in only well MW-4.

Based on these findings and reviews of pre-existing data, ESC recommended implementing a soil vapor extraction (SVE) system using the existing well network supplemented with in-situ chemical oxidation using hydrogen peroxide.

On April 9, 1997, Rathon authorized ESC to commence operation of an SVE system at the site for kerosene remediation. The SVE system is permitted by the South Coast Air Quality Management District (SCAQMD) which consists of a catalytic oxidation unit operating at an approximate flow rate of 110 SCFM. After eight weeks of operation, the SVE system had removed all of the free product in MW-4, demonstrating that the system is operating efficiently. Approximately 20,000 gallons of groundwater have also been extracted from MW-4 and treated by granular activated carbon.

ESC collected additional groundwater samples on July 28, 1997 (after nearly four months of SVE operations) to gauge the effects the SVE system has had on groundwater quality. Results clearly demonstrated the system is working efficiently. As mentioned above, the free product in MW-4 was removed by the SVE system and levels of dissolved kerosene (TPH as kerosene) in



ENVIRONMENTAL STRATEGIES CORPORATION

101 Metro Drive Suite 650

San Jose, California 95110

408-453-6100

Figure 2

Site Plan

Former Diversey Corp. Facility

8921 Dice Road, Sante Fe Springs, California 90670

MW-4 were reduced from 440 mg/l before system start up, to 4 mg/l in July, 1997 (Tables 1 and 2).

The most current data from the SVE remediation system showed influent vapor stream hydrocarbon concentrations as high as 538 ppm and, as of September 25, 1997, over 765 pounds of hydrocarbons had been removed by the system.

On July 15, 1997, ESC submitted a letter to the RWQCB outlining the remedial action activities undertaken by Rathon and requesting a meeting to discuss our remediation goals and obtain regulatory closure for the site. At the request of the RWQCB on July 30, 1997, ESC submitted a letter from the DTSC to the RWQCB terminating the Voluntary Cleanup Agreement between former Diversey Corp. and the DTSC. This letter effectively made the RWQCB the responsible agency for the project. On August 11, 1997, ESC signed a RWQCB letter as agent for Rathon to assume responsibility for cost recovery by the Board. By September 2, 1997, the cost reimbursement account was officially established with the RWQCB (file no. 97-092).

Table 1
Groundwater Analytical Results
Diversey Corporation
Santa Fe Springs, California (a)
July 25, 1996

Compound	MW-2	MW-3	MW-4	MCLs
Total Extractable Petroleum Hydrocarbons				
Kerosene (b)	ND	ND	440	
Volatile Organic Coumpounds				
Trichlorofluoromethane	ND	1.3	ND	150
1,1-Dichloroethene	130	50	380	6
1,1-Dichloroethane	6.6	16	ND	5
cis-1,2-Dichloroethene	ND	3.4	61	6
Chloroform	2.3	7	ND	UR
1,1,1-Trichloroethane	21	7.8	56	200
Carbon tetrachloride	2.4	9.1	ND	0.5
1,2-Dichloroethane	2	4.7	ND	0.5
Trichloroethene	83	82	ND	5
1,2-Dichloropropane	ND	16	ND	5
Tetrachloroethene	42	50	ND	5
1,2,3-Trimethylbenzene	ND	ND	60	UR
Polynuclear Aromatic Hydrocarbons				
	ND	ND	ND	

a/ ug/l

b/ mg/l

UR/ un regulated

ND/ not detected

 / above the MCL

Table 2
Chemical Analytical Results
Groundwater Samples Collected July 28, 1997
Former Diversey Corp.
Santa Fe Springs, California (a)

	<u>EW-1</u>	<u>EW-2</u>	<u>MW-4</u>	<u>EW-3</u>	<u>MW-2</u>	<u>MCL</u>
TEPH (kerosene mg/l)	1.5	1.2	4	1.6	0.43	
TEPH (mg/l)	ND	ND	2	1.2	0.41	
 Benzene	ND	ND	0.5	ND	ND	1
Carbon tetrachloride	4.1	ND	7	ND	ND	0.5
Chloroform	4.2	0.5	25	ND	0.8	U
1,1-Dichloroethane	14	4.5	220	25	1.5	5
1,2-Dichloroethane	ND	ND	13	ND	ND	0.5
1,1-Dichloroethene	310	19	2,500	6.4	7.7	6
cis-1,2-dichloroethene	31	20	35	87	3.8	6
trans-1,2-Dichloroethene	ND	ND	0.6	1.1	ND	10
1,2-Dichloropropane	32	8.6	37	11	14	5
4-Methyl-2-pentanone	14	ND	ND	ND	ND	U
Tetrachloroethene	8.6	0.8	71	0.5	28	5
1,1,1-Trichloroethane	40	2.9	410	ND	ND	200
Trichloroethene	8.2	1.3	26	2.1	78	5
Trichlorofluoromethane	ND	ND	ND	ND	1.8	150

26 /above MCLs

a /concentrations in ug/l unless specified

U /unregulated

ND /not detected at detection limit

VOC Groundwater Review

Groundwater samples collected in 1989 by Thorne, in 1995 by Emcon, and in July 1996, and July 1997 by ESC contained several chlorinated organic compounds at levels exceeding their (MCLs) (Tables 1, 2, and 3). The Rathon facility is located in a heavily industrialized area and as such, detected constituents may therefore be more representative of the regional water quality than activities at the Diversey site. Based on discussions with plant personnel, Thorne reported in 1989 that halogenated solvents were not used, stored, or disposed of onsite at the time of the study. A recent inquiry with a former plant official, confirms that this practice continued up to the plant closure in 1992.

In order to develop additional information concerning impacts from offsite sources, ESC performed a regulatory database search and file review. The database search and file review identified several facilities within a one mile radius of the site that contain or formerly contained underground storage tanks or have handled or released hazardous chemicals. Of these sites, the ones of most note are those located north of the former Diversey plant. The Cal Western Paint Corporation and Western Screw Products, both located on Slauson Avenue, are noted as having released "unspecified" and "halogenated" solvents. Both these sites are located hydraulically upgradient from the Diversey site.

From a file review at the RWQCB, ESC also obtained information for the Pilot Chemical Company located north of the site at 11756 Burke Street in Santa Fe Springs, California. This site is of interest because it is located hydraulically upgradient from the site and the environmental investigative work currently being performed.

The groundwater beneath the Pilot Chemical site is contaminated with chlorinated VOCs. On May 17, 1996, Pilot Chemical Company submitted a Field Investigation Workplan to the RWQCB. The file review indicated that Pilot Chemical Company is planning an investigation to determine if upgradient sources of chlorinated VOCs are migrating onto their property. The workplan addresses potential source areas contaminated with 1,2-dichloroethane (1,2-DCA) and trichloroethene (TCE). It is not clear whether the workplan was implemented and if so what results were obtained.

Table 3
Summary of Groundwater Results
Diversey Corp.
8921 Dice Road, Santa Fe Springs, California

Sample I.D.	Sample Date	U.S. EPA Method 8015M for Kerosene (C8-C16)	Method 8010 Halogenated and Aromatic VOCs (µg/L)										Method 8370 PAHs		CAM TTLC Metals (µg/L)						Turbidity
			Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	1,1-Dichloroethene (CFC II)	1,1-Dichloroethane	Chloroform	1,1,1-Trichloroethane (TCA)	Trichloroethene (TCE)	1,2-Dichloropropane	Naphthalene (µg/L)	2-Methylnaphthalene (µg/L)	Arsenic	Barium	Chromium	Copper	Vanadium	Zinc	
MW-1	12/8/89	<0.5	NA	NA	NA	NA	200	20	5	300	44	3	<1	<1	NA	NA	NA	NA	NA	NA	NA
MW-2	12/8/89	<0.5	NA	NA	NA	NA	170	30	1	50	28	15	<1	<1	NA	NA	NA	NA	NA	NA	NA
	12/21/95	<0.5	<0.5	<0.5	<0.5	<1.0	NA	NA	NA	NA	NA	NA	<5	<5							49
MW-3	12/8/89	<0.5	NA	NA	NA	NA	230	24	<5	80	260	550	<1	<1	NA	NA	NA	NA	NA	NA	NA
MW-3B	12/21/95	<0.5	1.0	<0.5	<0.5	<1.0	NA	NA	NA	NA	NA	NA	<5	<5							260
MW-4	12/8/89	<0.5	NA	NA	NA	NA	220	46	5	71	21	<1	8	<1	NA	NA	NA	NA	NA	NA	NA
	8/15/95	1,300	NA	NA	NA	NA	180	28	41	67	12	44	23	13	0.017	0.10	0.05	0.01	0.01	0.03	NA
	12/21/95*	1,000,000 ⁽¹⁾	<5	<5	58,000	110,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EW-1	12/21/95	<0.5	<0.5	<0.5	<0.5	<1.0	NA	NA	NA	NA	NA	NA	<5	<5	NA	NA	NA	NA	NA	NA	320
EW-2	12/21/95	<0.5	1.0	<0.5	<0.5	<1.0	NA	NA	NA	NA	NA	NA	<5	<5	NA	NA	NA	NA	NA	NA	480
EW-3A	12/21/95	<0.5	1.8	<0.5	<0.5	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EW-3B	12/21/95	<0.5	1.4	<0.5	<0.5	<1.0	NA	NA	NA	NA	NA	NA	<5	<5	NA	NA	NA	NA	NA	NA	36

Notes:

* = MRL is elevated because the sample required diluting.

NA = Not analyzed

⁽¹⁾ = Well was found to contain pure product.

1) December 1989 VOCs analysis using U.S. EPA Method 624.

2) December 1989 PAHs analysis using U.S. EPA Method 625.

3) December 1995 BTEX analysis using U.S. EPA Method 8020.

Analysis performed by Golden State/CAS, Inc., Canoga Park, California.

Pilot Chemical Company is also listed on the Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS); Leaking Underground Storage Tank (LUST); CORTESE: Identified Hazardous Waste and Substance Sites (CORTESE); Emergency Response Notification System (ERNS); Toxic Chemical Release Inventory System (TRIS); and underground storage tank/aboveground storage tank (UST/AST) databases. Under LUST, Pilot Chemical has had leaks of diesel to the groundwater.

Another site, Parker Hannifin Corporation, located northeast of Diversey, is listed on TRIS for a release of 1,1,1-trichloroethane.

Investigation Procedures

At the request of the Los Angeles Regional Water Quality Control Board (RWQCB), ESC performed a soil gas survey, groundwater sampling, and soil sampling investigation at the site to determine the effectiveness of the SVE system and whether the site is a source of VOC contamination. All work was performed in accordance with the September 23, 1997 workplan submitted to and verbally approved by Ms. Jenny Au of the RWQCB on September 26, 1997. A confirmation approval letter was sent by the RWQCB to ESC on October 14, 1997.

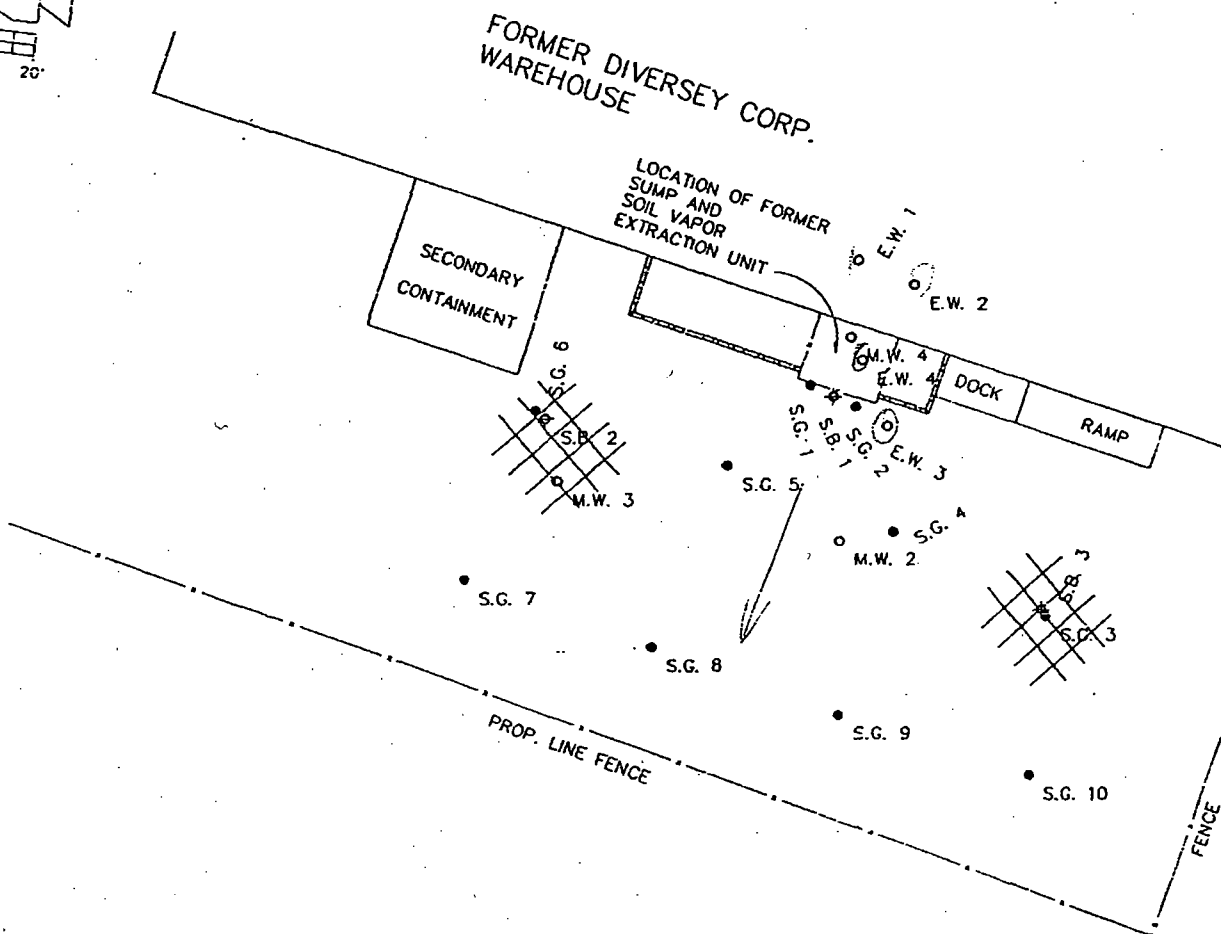
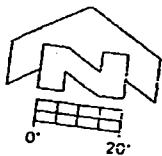
Soil Gas Sampling Procedures

ESC retained Environmental Support Technologies, Inc., (EST) to conduct a soil gas survey at the site. EST is a California-certified environmental laboratory which operates under the Department of Health Services Environmental Laboratory Accreditation Program (ELAP) (Certification Number 1996).

The soil gas survey was conducted in accordance with the approved work plan submitted September 23, 1997 and "Requirements for Active Soil Gas Investigation Well Investigation Program" (WIP) dated February 25, 1997. The objective for this investigation was to determine if vadose zone soils have been impacted by VOCs or total petroleum hydrocarbons as kerosene (TPHk) from identifiable potential sources at the site.

Potential source areas were reviewed by ESC and incorporated into the September 23, 1997 work plan. Three potential source areas were identified by ESC: one at the former sump location, one at the suspected eastern seepage pit location, and one at the suspected western seepage pit location. These locations are shown in Figure 3.

A total of 20 soil gas samples were collected, ranging in depth from five feet to fifteen feet bgs (Appendix A). At each sampling location dedicated soil gas probes were installed using either a hand-held percussion hammer or truck-mounted hydraulic ram. Once a probe was installed to the desired depth, the hollow probe drive-rod was withdrawn, leaving the stainless steel probe point and sampling tube in the subsurface. Clean, graded #2/12 Lonestar Monterey sand was poured around the probe tip to facilitate diffusion of soil vapors. The remaining annulus was filled with a hydrated bentonite/cement slurry to approximately three-inches below grade.



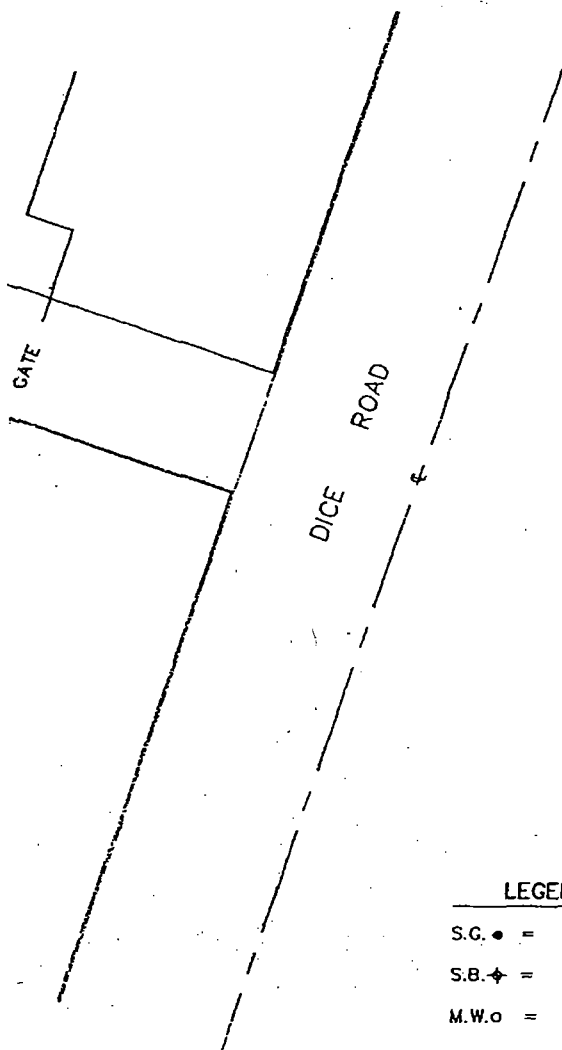
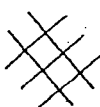


TABLE OF ELEVATIONS		
ITEM	ELEV.	NOTES
S.G. 1	149.51	TOP OF ASPHALT
S.G. 2	149.41	-
S.G. 3	149.05	-
S.G. 4	149.09	-
S.G. 5	149.16	-
S.G. 6	149.04	-
S.G. 7	149.21	-
S.G. 8	149.09	-
S.G. 9	149.34	-
S.G. 10	148.58	-
S.B. 1	149.42	TOP OF ASPHALT
S.B. 2	149.02	-
S.B. 3	148.93	-
M.W. 2	148.57	NORTH EDGE OF CASING
M.W. 3	148.38	-
M.W. 4	149.14	-
E.W. 1	152.94	NORTH EDGE OF CASING
E.W. 2	152.49	-
E.W. 3	148.87	-
E.W. 4	149.00	-

LEGEND:

- S.G. • = SOIL GAS
 S.B. ♦ = SOIL BORING
 M.W. o = MONITORING WELL
 E.W. o = EXTRACTION WELL
 = APPROXIMATE LOCATION OF SUSPECTED SEEPAGE PITS

ENVIRONMENTAL STRATEGIES CORPORATION
 101 METRO DRIVE, SUITE 650
 SAN JOSE, CA 95110
 PREPARED FOR
 FORMER DIVERSEY CORP.
 8921 DICE ROAD
 SANTA FE SPRINGS, CA

The soil gas sampling probes were then purged at a flow rate of approximately 100 milliliters per minute (ml/min). After completion of time series sampling, which is used to evaluate trends in soil gas concentration, it was determined that 100 ml to 200 ml purge volumes were appropriate for five and fifteen foot depth soil gas probes, respectively.

Soil gas samples were analyzed in the field using a mobile laboratory equipped with a Varian-3400 gas chromatograph (GC) configured with a photo-ionization detector (PID) and an electrolytic conductivity detector (ELCD) placed in series. Soil gas samples were analyzed for VOCs by EPA Method 8021 (equivalent to EPA Methods 8010/8020) and TPH by EPA Method 8015. During analysis, no dilution was required and a detection limit of one microgram per liter ug/l was used for VOC analysis and 50 ug/l was used for TPH analysis. Upon completion of sampling, the tubing was cut below grade and capped with a stainless steel screw. The hole was subsequently backfilled with an asphalt patch. A more detailed description of the analytical procedures including the quality assurance/quality control (QA/QC) procedures and results are provided in Appendix B.

Groundwater Sampling Procedures

The horizontal locations of the monitoring wells and permanent facility structures, and the vertical elevations of the top of the monitoring well casings and ground surface were surveyed by CTK Engineers, Inc., of Montclair, California.

The depths to water was measured in each well with an electric water level indicator. Measurements were taken from the permanent measuring point on the northern side of the top of the PVC casing and were recorded to the nearest hundredth of a foot (Table 4). An oil/water interface probe was initially used to determine if phased product was present in any of the monitoring wells. No product layer was detected in the wells.

On October 9, 1997, ESC collected groundwater samples from six monitoring and extraction wells (MW-2, MW-3, MW-4, EW-1, EW-2, EW-3) for laboratory analysis. EW-3 was dry and MW-1 could not be located and appears to have been paved over with asphalt. A decontaminated stainless steel bailer was used to remove a minimum of three volumes of groundwater from each well. A disposable bailer was used to collect the groundwater samples.

Table 4
Groundwater Elevation Monitoring Data for
Former Diversey Corp., Santa Fe Springs, California (a)

<u>Well</u>	<u>Top of Casing Elevation</u>	<u>Depth to Water</u>	<u>10/9/1997 Groundwater Elevation</u>	<u>Product Thickness</u>
MW-2	148.57	35.50	113.07	ND
MW-3	148.38	35.31	113.07	ND
MW-4	149.14	35.95	113.19	ND
EW-1	152.94	38.95	113.99	ND
EW-2	152.49	39.12	113.37	ND
EW-3	148.87	35.66	113.21	ND
EW-4	149.00	dry		

a/ measured in feet mean sea level

ND/ not detected

Field measurements of pH, specific conductance, and temperature were monitored during purging. Field measurements were recorded on logs and are available in Appendix C. The purge water from the wells was temporarily placed in 55-gallon drums and will subsequently be treated by activated carbon at the onsite treatment system and discharged through a pending National Pollution Discharge Elimination System (NPDES) permit to the storm drain.

The collected samples were analyzed for VOCs, TPH as kerosene, surfactants, pH, total phosphates, and chlorides using EPA Methods 8240, 8015m, 425.1, 9040, 365, and 9250 respectively. A duplicate sample was collected from well MW-4 and submitted blind to the laboratory. All samples were documented on chain-of-custody records (Appendix D), packaged with wet ice in an insulated cooler, and delivered to Centrum Analytical Laboratory, a California State certified laboratory.

Soil Sampling Procedures

Soil samples were collected from three locations: adjacent to the former sump, in the eastern suspected seepage pit area, and in the western suspected seepage pit area. The samples were collected by EST using procedures similar to those used to collect soil gas samples. The samples were collected with a hydraulic probe sampler at depth intervals of five feet. Each soil sample was analyzed for VOCs and TPH as kerosene using EPA Methods 8260 and 8015m, respectively. Four soil samples were collected from SB1 located adjacent to the former sump area, to a depth of 20-feet bgs, and three soil samples were collected from SB2, located in the suspected western seepage pit area, and SB3, located in the suspected eastern seepage pit area, all to a depth of 15-feet bgs. Refusal was encountered at a depth of 20-feet bgs while collecting soil samples from SB1.

Each sample was collected in an 18-inch split spoon containing three six-inch brass liners. Upon retrieval of the split spoon, a brass liner was selected, covered at each end with Teflon tape, capped, labeled, and placed on ice for delivery to the laboratory. The chain-of-custody documentation is provided in Appendix D.

The sampling equipment was thoroughly decontaminated before the commencement of work and between each sampling location to prevent potential cross-contamination. All down

hole equipment was decontaminated by scrubbing with a brush and a detergent and water solution, rinsing with tap water, and double rinsing with distilled water.

Investigation Results

Soil Gas Sampling Results

The results of the soil gas survey are provided in Table 5. The sample numbers refer to the sampling location and sample depth. For example, sample SG1-5 is a soil gas sample collected from location number one at a depth of five feet bgs.

Chlorinated VOCs were detected in 15 of the 20 probe locations (Figure 4). Trichloroethene (TCE) was found in six probe locations at concentrations up to 21 ug/l at SG6-15. Cis 1,2-Dichloroethene (cis 1,2-DCE) was found at three probe locations at concentrations up to 5 ug/l at SG6-5; 1,1-Dichloroethene (1,1-DCE) was found at three probe locations up to 17 ug/l at SG8-15; and tetrachloroethene (PCE) was found at two probe locations at a concentration up to 5 ug/l at SG8-15.

VOCs were not detected in five soil gas samples at SG2-5, SG3-5, SG3-15, SG9-5, and SG10-15. TPH quantified as kerosene were detected in two of the 20 soil gas probe locations at concentrations of 51 ug/l at SG5-5 and 52 ug/l at SG6-15.

The soil gas sampling survey indicates that soils within the soil gas survey have not been significantly impacted with kerosene or chlorinated solvents. Based on the analytical data, soils within the suspected seepage pits are not source areas of kerosene or chlorinated solvent contamination.

Groundwater Sampling Results

The October 1997 groundwater sample results were compared to MCLs or, in the absence of MCLs, action levels (ALs). MCLs are enforceable drinking water standards developed by the DTSC. ALs are non-enforceable health-based guidance levels for drinking water proposed by the DTSC. Although groundwater beneath the Rathon site is not used for drinking water purposes, MCLs and ALs can be used for comparative purposes to evaluate potentially significant constituent concentrations in groundwater.

The groundwater elevation data indicate that the groundwater gradient in the area slopes towards the south. Based on this information, EW-1 and EW-2 are located upgradient of the

Table 5

SUMMARY OF FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES

DIVERSEY CORPORATION
8921 DICE ROAD
SANTA FE SPRINGS, CALIFORNIA

10/21/97

File: 1519.T2

PROBE NUMBER	DATE OF SAMPLING	PROBE DEPTH (ft)	SAMPLING EVENTS	1,1-DCE (µg/L)	trans-1,2-DCE (µg/L)	cis-1,2-DCE (µg/L)	TCE (µg/L)	PCE (µg/L)	TOLUENE (µg/L)	EBENZ (µg/L)	m+p-XYL (µg/L)	o-XYL (µg/L)	TVPH as KEROSENE (µg/L)
SG1-5	10/9/97	5	3	ND<1	ND<1	ND<1	ND<1	ND<1	2	ND<1	ND<1	ND<1	ND<50
SG1-15	10/9/97	15	1	ND<1	ND<1	ND<1	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG2-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG2-15	10/9/97	15	1	ND<1	ND<1	ND<1	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG3-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG3-15	10/9/97	15	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG4-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	1	ND<1	ND<50
SG4-15	10/9/97	15	1	2	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG5-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	2	ND<1	3	51
SG5-15	10/9/97	15	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	1	ND<1	ND<50
SG6-5	10/9/97	5	1	ND<1	ND<1	5	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG6-15	10/9/97	15	1	ND<1	ND<1	2	12	1	ND<1	ND<1	ND<1	2	52
SG7-5	10/9/97	5	1	ND<1	ND<1	4	3	ND<1	2	ND<1	1	ND<1	ND<50
SG7-15	10/9/97	15	1	ND<1	ND<1	ND<1	13	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG8-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	2	ND<1	ND<50
SG8-15	10/9/97	15	1	17	ND<1	ND<1	3	5	ND<1	ND<1	ND<1	ND<1	ND<50
SG9-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG9-15	10/9/97	15	1	6	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG10-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	1	ND<1	ND<50
SG10-15	10/9/97	15	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50

ft = Feet below grade

µg/L = Micrograms per liter

1,1-DCE = 1,1-Dichloroethene

trans-1,2-DCE = trans-1,2-Dichloroethene

cis-1,2-DCE = cis-1,2-Dichloroethene

TCE = Trichloroethene

PCE = Tetrachloroethene

EBENZ = Ethylbenzene

m+p-XYL = meta and para-Xylene

o-XYL = ortho-Xylene

TVPH = Total Volatile Petroleum Hydrocarbons

ND = Not Detected; sample is below the reported limit of quantitation.

former sump area. MW-2, and MW-3 are located downgradient of the former sump area and MW-4 (Figure 5)

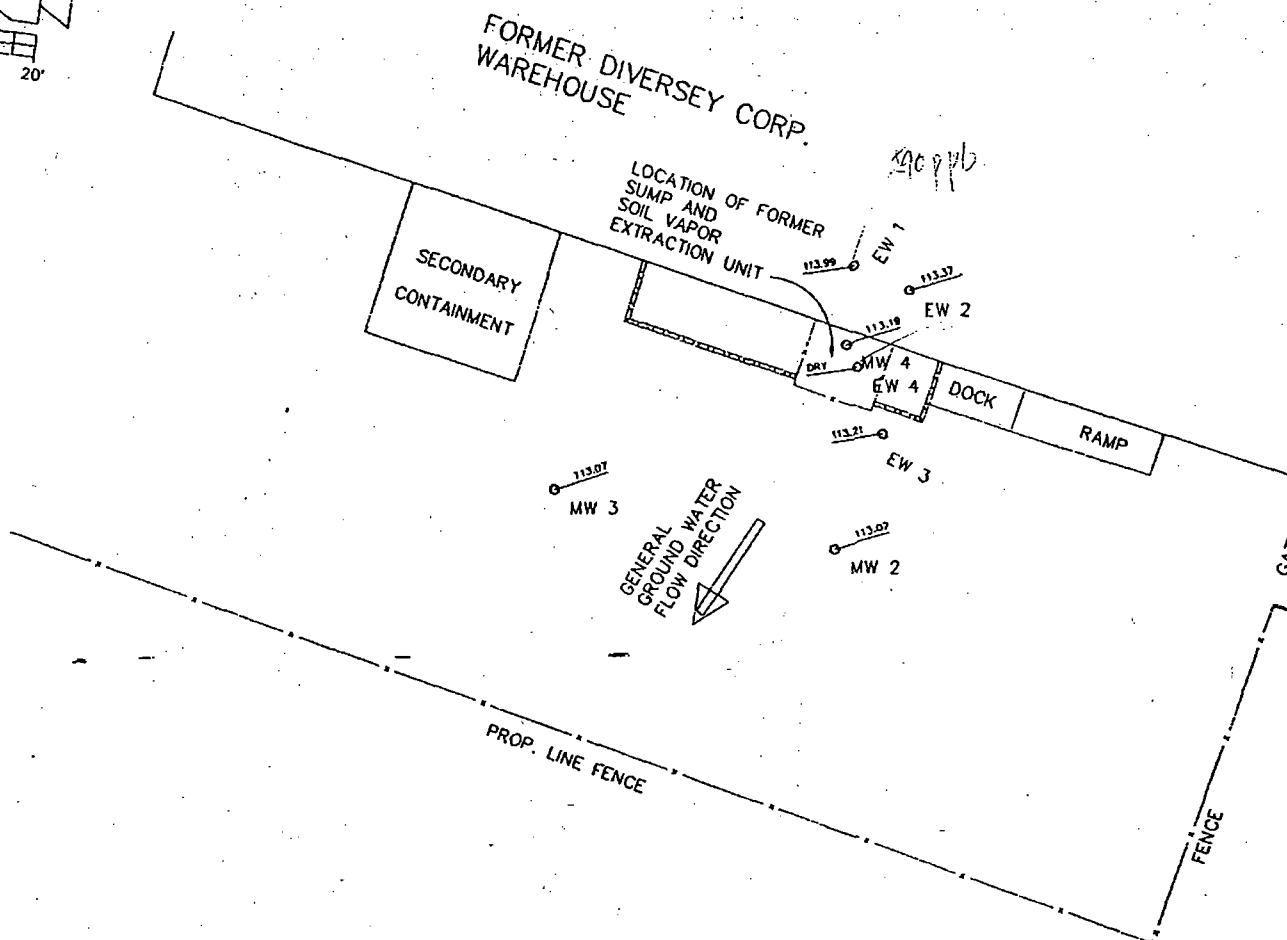
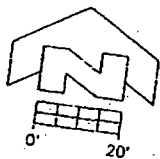
The highest concentration of TPH quantified as kerosene (TPHk) in groundwater was 9.2 mg/l detected in the sample from MW-4, located in the former concrete sump area. TPHk was also detected at concentrations of 1.4 mg/l, and 0.41 mg/l in EW-3 and MW-3. MW-2, EW-1, and EW-2 did not contain detectable levels of TPHk. Laboratory analytical results are provided in Appendix E.

MW-3, located downgradient of the former sump area, and in the proximity of the suspected western seepage pit, contained the highest concentration of chlorinated VOCs in groundwater. The concentration of eight VOCs: carbon tetrachloride (CT), 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), 1,2-dichloropropane (1,2-DCP), tetrachloroethene (PCE), and trichloroethene (TCE) in the sample from this well were equal to or above MCLs (Table 6). The levels of these compounds in MW-3 ranged from 3.4 ug/l of 1,2-DCA to 380 ug/l of 1,2-DCP.

MW-4, located in the former sump area, contained concentrations of eight chlorinated VOCs: CT, 1,1-DCA, 1,2-DCA, 1,1-DCE, cis-1,2-DCE, 1,2-DCP, PCE, and TCE that met or exceeded the MCLs. The levels of these compounds in MW-4 ranged from 6.3 ug/l of 1,2-DCP to 270 ug/l of 1,1-DCE.

EW-1, located approximately 15-feet upgradient of the former sump area, contained concentrations of eight chlorinated VOCs: CT, 1,1-DCA, 1,2-DCA, 1,1-DCE, cis-1,2-DCE, 1,2-DCP, PCE, and TCE that met or exceeded the MCLs. The levels of these compounds in EW-1 ranged from 4.7 ug/l of 1,2-DCA to 590 ug/l of 1,2-DCE. Six VOC in EW-3, five VOCs in MW-2, and four VOCs in EW-2 met or exceeded the MCLs.

Groundwater analytical data indicates that pH ranging from 7 to 8 is within the secondary drinking water standards of 6.5 to 8.5 (Table 7). Surfactants as methylene blue active substances (MBAS) were detected in MW-3 and EW-3 at minor concentrations of 1.3 mg/l and 0.1 mg/l,



ENVIRONMENTAL STRATEGIES CORPORATION
101 Metro Drive Suite 650
San Jose, California 95110
(408) 453-6100

Figure 5
Groundwater Elevations - October 9, 1997
Former Diversey Corp. Facility
Santa Fe Springs, California

DICE ROAD

LEGEND:

MW ○ = MONITORING WELL
 EW ○ = EXTRACTION WELL

MARK # DY 8667 ELEV.152.938
 1' IN EAST CURB NOWALK BLVD.
 EAST OF CENTERLINE ON THE
 JULINE PROD OF BURKE STREET

NO.	DESCRIPTION	DATE	BY

ENVIRONMENTAL STRATEGIES CORPORATION	
101 METRO DRIVE, SUITE 500 SAN JOSE, CA 95110	
PREPARED FOR FORMER DIVERSE CORP. 8921 DICE ROAD SANTA FE SPRINGS, CA 92660	
OCTOBER 9, 1997 GROUND WATER ELEVATIONS	
SCALE: 1" = 20'	APPROVED BY CITY ENGINEER
DESIGNED BY S.D.	CHECKED BY CITY ENGINEER
DRAWN BY S.D.	DATE 10/9/97
CHECKED BY S.D.	DATE 10/9/97

Table 6
Chemical Analytical Results
Groundwater Samples Collected October 9, 1997
Former Diversey Corp.
Santa Fe Springs, California (a)

	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>EW-3</u>	<u>EW-1</u>	<u>EW-2</u>	<u>MCLS</u>
TEPH (kerosene mg/L)	ND	0.41	9.2	1.4	ND	ND	
benzene	ND	0.9	ND	ND	0.6	ND	1
n-butylbenzene	ND	ND	1	ND	ND	ND	UR
sec-butylbenzene	ND	ND	0.5	ND	ND	ND	UR
carbon tetrachloride	ND	2	12	ND	4	ND	0.5
chloroform	1	6.1	11	ND	7.7	ND	UR
1,2-dichlorobenzene	ND	5.6	ND	ND	ND	ND	600
1,4-dichlorobenzene	ND	1.4	ND	ND	ND	ND	5
1,1-dichloroethane	1.6	11	55	16	20	16	5
1,2-dichloroethane	ND	3.4	7.7	0.7	4.7	ND	0.5
1,1-dichloroethene	9.2	150	270	7.3	590	29	6
cis-1,2-dichloroethene	6.1	71	6	51	40	46	6
trans-1,2-dichloroethene	ND	1.4	ND	0.8	0.7	0.9	10
1,2-dichloropropane	15	380	6.3	47	31	13	5
ethylbenzene	ND	ND	ND	ND	ND	ND	700
isopropylbenzene	ND	ND	ND	ND	ND	ND	UR
p-isopropyltoluene	ND	ND	2.4	ND	ND	ND	UR
naphthalene	ND	ND	1.2	ND	ND	ND	UR
n-propylbenzene	ND	ND	0.6	ND	ND	ND	UR
tetrachloroethene	25	35	38	1.2	16	1.4	5
1,1,1-trichloroethane	ND	12	30	0.8	64	8.1	200
1,1,2-trichloroethane	ND	ND	0.7	ND	ND	ND	5
trichloroethene	96	210	27	30	14	2.5	5
1,2,3-trichloropropane	ND	1.6	ND	ND	ND	ND	UR
trichlorofluoromethane	2.8	ND	ND	ND	ND	ND	150
1,2,4-trimethylbenzene	ND	ND	2	ND	ND	ND	UR
1,3,5-trimethylbenzene	ND	ND	0.5	ND	ND	ND	UR
Total VOCs	156.7	890.5	471.9	154.8	792.1	116.9	

ND/ not detected at reportable limit

a/ ug/L

UR/ unregulated

i:\123files\bbealkow\divgw.xls

Table 7
Chemical Analytical Results
Groundwater Samples Collected October 9, 1997
Former Diversey Corp.
Santa Fe Springs, California (a)

	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>EW-3</u>	<u>EW-1</u>	<u>EW-2</u>	<u>Secondary Drinking Water Standards</u>
pH	8	7.5	7.3	7.6	7.2	7	6.5 - 8.5
Surfactants (MBAS)	ND	1.3	ND	0.1	ND	ND	0.5
Total phosphorous	5.2	5	2.9	3.4	2.6	0.4	UR

ND/ not detected at reportable limit

a/ mg/L

UR/ unregulated

i:\123files\bbcaikow\divgw2.xls

respectively while MW-3 MBAS concentrations are slightly above the secondary drinking water standards of 0.5 mg/l, MW-2, MW-4, EW-1, and EW-2 did not contain MBAS. Total phosphorous was detected in all of the wells up to a concentration of 5.2 mg/l in MW-2. Phosphorous is currently unregulated by the State of California.

The July 28, 1997 results indicate a significant reduction in TPH as kerosene in MW-4. Currently, there is no floating product in MW-4 and kerosene concentrations have been reduced by two orders of magnitude, from 440 mg/l to 9.2 mg/l since the implementation of the SVE system in April 1997.

The data also indicate that the chlorinated VOCs detected in all of the wells are representative of an area wide problem. Accordingly, the VOCs originate from offsite sources. The chlorinated VOC concentrations from the soil gas survey and soil samples are very low and are not indicative of a source area near these wells.

Soil Sampling Results

TPHk was not detected in soil samples collected at SB2 (suspected western seepage pit area), and SB3 (suspected eastern seepage pit area). TPHk was detected at a concentration of 33 mg/kg, 19,000 mg/kg and 240 mg/kg from samples collected at SB1 (adjacent to the former sump area) at depths of 10-feet, 15-feet, and 20-feet, respectively. Chlorinated VOCs (TCE and PCE) were detected at low levels in SB1 and SB2, and no chlorinated VOCs were detected in SB3. TCE was detected at a concentration of 0.55 mg/kg in SB1-15. PCE was detected at a concentration of 0.002 mg/kg and 0.009 mg/kg in SB2-5 and SB3-15 respectively (Table 8). As depicted in Table 8, these VOCs are from off-site sources.

The compounds n-butylbenzene, sec-butylbenzene, ethylbenzene, isopropylbenzene, p-isopropylbenzene, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and xylenes (total) detected in soil sample SB1-15 are constituents in kerosene.

The data indicates that kerosene is still present in soils adjacent to the former concrete sump area at boring SB1 at 10-feet to 20-feet bgs. The detection of aliphatic hydrocarbons and aromatic hydrocarbons in this area (i.e., trimethylbenzenes, n-propylbenzene etc.) confirms that the VOCs detected are primarily constituents of kerosene. Remediation of the kerosene impacted soils is addressed in the summary and conclusion section of this report.

Table 8
Chemical Analytical Results
Soil Samples Collected October 10, 1997
Former Diversey Corp.
Santa Fe Springs, California (a)

	<u>SB1-5'</u>	<u>SB1-10'</u>	<u>SB1-15'</u>	<u>SB1-20'</u>	<u>SB2-5'</u>	<u>SB2-10'</u>	<u>SB2-15'</u>	<u>SB3-5'</u>	<u>SB3-10'</u>	<u>SB3-15'</u>
TEPH (kerosene)	ND	33	19,000	240	ND	ND	ND	ND	ND	ND
n-butylbenzene	ND	ND	14	ND	ND	ND	ND	ND	ND	ND
sec-butylbenzene	ND	0.002	6.7	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	ND	ND	ND	ND	ND	0.002	0.002	ND	ND	ND
cis-1,2-dichloroethene	ND	ND	ND	ND	0.014	0.003	0.045	ND	ND	ND
1,2-dichloropropane	ND	ND	ND	ND	0.018	0.008	0.078	ND	ND	ND
ethylbenzene	ND	ND	1.6	ND	0.006	ND	ND	ND	ND	ND
isopropylbenzene	ND	ND	2.6	ND	ND	ND	ND	ND	ND	ND
p-isopropyltoluene	ND	ND	8	ND	ND	ND	ND	ND	ND	ND
napthalene	ND	ND	4.4	ND	ND	ND	ND	ND	ND	ND
n-propylbenzene	ND	ND	6.5	ND	ND	ND	ND	ND	ND	ND
tetrachloroethene	ND	ND	ND	ND	0.002	ND	0.009	ND	ND	ND
trichloroethene	ND	ND	0.55	ND	0.009	0.006	0.081	ND	ND	ND
1,2,4-trimethylbenzene	ND	0.002	35	0.002	0.001	ND	ND	ND	ND	ND
1,3,5-trimethylbenzene	ND	ND	17	ND	ND	ND	ND	ND	ND	ND
xylenes (total)	ND	ND	13	ND	0.036	ND	ND	ND	ND	ND
Total VOCs	0	0.004	109.35	0.002	0.086	0.019	0.215	0	0	0

ND/ not detected at reportable limit

a/ mg/kg

i:\123files\bbealkow\divsb.xls

Summary and Conclusions

The data from the former Diversey Corp. site indicate that any chlorinated VOCs detected in the wells are due to the area wide problem. The chlorinated VOC concentrations from the soil gas survey and soil samples are low and are not indicative of a source area near these wells. Moreover, the MBAS detected in MW-3 are not significantly above secondary drinking water standards and are considered a minor issue compared to the chlorinated VOC contamination from offsite sources found in groundwater.

Based on the data collected from previous investigations and ESC's most recent investigation, soils near the former sump area were affected by TPH in the form of kerosene. The soil gas survey did not detect TPHk in the areas adjacent to the former sump area or suspected seepage pit areas. Soil gas sample SG5-5 and SG6-15 detected minimal levels, slightly above the instruments detection limit of 50 ug/l of TPHk. This indicates that soils within the soil gas survey have not been significantly impacted with kerosene. Although the soil gas results did not detect kerosene in the former sump area, soil borings in the same area (SB1) indicated that kerosene is present in soils at depths of approximately 10-feet to 20-feet bgs. The detection of aliphatic hydrocarbons and aromatic hydrocarbons in SB1-15 (i.e., trimethylbenzenes, n-propylbenzene etc.) confirms the presence of kerosene.

The October 9, 1997 results indicate a significant reduction in TPH as kerosene in MW-4. Currently, there is no floating product in MW-4 and kerosene concentrations have been reduced by two orders of magnitude, from 440 mg/l to 9.2 mg/l since the implementation of the SVE system in April 1997. The most current data from the SVE remediation system showed influent vapor stream hydrocarbon concentrations as high as 538 ppm and, as of September 25, 1997, over 765 pounds of hydrocarbons had been removed by the system.

Based on ESC's assessment of existing data at the former Diversey Corp. facility, residual kerosene contamination exists within the soils and groundwater in a very limited area near the former concrete sump location outside the south wall of the facility.

ESC will continue the operation and maintenance of the SVE system using the current well network at the site. Additional extraction wells, EW-1 and EW-2, will also be used to

enhance the vapor extraction effort. Upon discharging the accumulated water in the Baker tank, ESC will implement dual vapor extraction (DVE) to assist in remedial efforts of the affected soils. DVE involves the extraction of groundwater by applying vacuum to the wells and creates a depression in the water table. This depression will increase the vapor extraction surface area and enhance the remediation of the capillary fringe soils.

Appendix A - Summary of Previous Investigations

Appendix A

1985 through 1986: Preliminary Assessment

J.H. Kleinfelder and Associates (Kleinfelder) performed a preliminary assessment of the site in 1985, which included the installation of two-inch diameter groundwater monitoring wells (MW-1, MW-2, and MW-3) (Figure 2). Available reports did not contain chemical analytical data from the initial groundwater sampling.

May 1989: Report of Kerosene Pipeline Leak

A leak in an underground kerosene pipeline was reported in May 1989 during excavation of the containment berm for the aboveground kerosene storage tank. This discovery prompted further subsurface investigations, as described below, to determine the extent of impacted soil.

June 1989: Phase I Assessment

In June 1989, Thorne Environmental, Inc. (Thorne) drilled nine exploratory borings (SB-1 through SB-9) to depths of approximately 25 feet in the vicinity of three (former) aboveground storage tanks and several underground pipelines at the project site. Maximum total petroleum hydrocarbon (TPH) concentrations as kerosene (4,900 mg/kg) were detected at a depth of approximately 5 feet in boring SB-9, adjacent to a concrete sump area through which pipelines entered the facility warehouse. TPH concentrations as kerosene were not detected in the samples analyzed from shallow soil borings SB-1 through SB-8.

September 1989: Phase II Assessment

Based upon the findings of the initial assessment, Thorne conducted a second investigation to further characterize the vertical and horizontal extent of impacted soils in the vicinity of the concrete sump area. In September 1989, two additional borings (SB-11 and SB-12) were drilled in the vicinity of the concrete sump to a depth of 46.5 feet. TPH concentrations up to 11,000 mg/kg were detected in SB-11 at a depth of 45 feet. TPH was not detected in SB-12, approximately 10 feet south of the concrete sump area.

December 1989: Phase III Assessment

In December 1989, Thorne installed a combination groundwater monitoring/vapor extraction well (MW-4) to determine if groundwater beneath the subject site had been impacted by kerosene, and to perform a vapor extraction feasibility study. Soil boring SB-19 was converted to a well and named MW-4. In addition to sampling and developing MW-4, Thorne developed and sampled the three existing groundwater monitoring wells (MW-1 through MW-3) which were installed in 1985. TPH concentrations as kerosene were not detected in soil samples collected from MW-4 at depths of approximately 50, 55, and 60 feet, or in the four groundwater samples collected. Thus, it was concluded that kerosene had not migrated vertically to the groundwater table.

Groundwater was encountered during the installation of MW-4 (SB-19) at a depth of 54.35 feet below the ground surface (bgs). Groundwater depths measured in the three other site wells (MW-1 through MW-3) ranged between 53.59 feet bgs and 54.00 feet bgs on November 10, 1989.

Based on the results of the feasibility study, Thorne recommended vapor extraction for remediation of the kerosene impacted soil at the site. Thorne also prepared and Diversify submitted a workplan for soil excavation in the vicinity of the aboveground tank farm (this workplan did not include sump area) to the Los Angeles County Department of Health Services (LACDHS) in December 1989.

December 20, 1989: LACDHS Approval of Soil Remediation Workplan

The LACDHS approved the soil excavation workplan for the excavation of soils in the vicinity of the former aboveground storage tanks.

November 15 and 16, 1990: Excavation of Kerosene-Impacted Soils in the Vicinity of the Former Aboveground Storage Tanks

Under the workplan approved by the LACDHS, approximately 390 cubic yards of soil were removed from beneath the former aboveground storage tank berm area. The soil was stockpiled at the site and transported for proper disposal at a permitted facility in January 1991.

March 16, 1991: Phase IV Assessment (Dry Sump Area)

Diversey retained a new consultant, EMCON, who installed three exploratory soil borings (EW-1 through EW-3) to more accurately define the vertical and areal extent of the kerosene-impacted soils in the vicinity of the dry sump. The borings were drilled on March 16 and March 19, 1991 to depths of approximately 46 feet. Borings EW-1 and EW-2 were drilled inside the storage warehouse (the warehouse sits on an elevation of approximately 5 feet above the ground surface) and boring EW-3 was drilled outside in the loading dock area (See Figure 2). Upon boring termination, borings EW-1 and EW-2 were converted to two-inch-diameter vadose-zone monitoring wells. Boring EW-3 was converted to a four-inch-diameter vadose-zone monitoring well.

TPH (as kerosene) concentrations of 150 mg/kg, 7.5 mg/kg, and 660 mg/kg were detected in three of the samples analyzed from boring EW-3 at depths of 5, 15, and 20 feet, respectively. TPH was not detected (<1 mg/kg) in samples collected below a depth of 40 feet in borings EW-1 through EW-3.

Based on this assessment, EMCON recommended that a vapor extraction system be designed and implemented for the kerosene-impacted soil beneath the dry sump area.

June 2, 1994: Voluntary Cleanup Agreement

On June 2, 1994, Diversey entered into a voluntary cleanup agreement with the California Department of Toxic Substances Control (DTSC).

Appendix B- Soil Gas Survey QA/QC



**MULTI-DEPTH
SOIL GAS SURVEY REPORT**

**DIVERSEY CORPORATION
8921 DICE ROAD
SANTA FE SPRINGS, CALIFORNIA**

Prepared for:

**Environmental Strategies Corporation
101 Metro Drive
San Jose, California 95110**

Prepared by:

**Environmental Support Technologies, Inc.
23011 Moulton Parkway, Suite E-6
Laguna Hills, California 92653**

Project No. EST1519

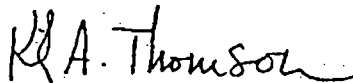
October 24, 1997

LIMITATIONS AND WARRANTIES

This Multi-Depth Soil Gas Survey Report has been prepared for the exclusive use of Environmental Strategies Corporation and assigned interested parties. The report has been prepared in accordance with generally accepted environmental assessment practices. No other warranty, expressed or implied, is made.

The information provided in this report is based on measurements performed in specific areas during a specific limited period of time. In the event that any changes occur in waste management practices, site conditions, or uses of the property, the information contained in this report should be reviewed and modified or verified in writing by Environmental Support Technologies, Inc. (EST).

Soil gas sample analyses are conducted using laboratory-grade gas chromatography equipment. Chemical compound identification is performed using quantitative methods. Chemical compound identities should be verified using gas chromatography/mass spectrometric analyses methods. Soil gas survey data should be used in conjunction with other site-specific data.



Kirk A. Thomson, R.G., C.HG., R.E.A., M.S.
Project Manager/Principal Hydrogeologist

1.0 INTRODUCTION

On October 9, 1997, Environmental Support Technologies, Inc. (EST), at the request of Environmental Strategies Corporation, performed a multi-depth soil gas survey at the Diversey Corporation facility located at 8921 Dice Road in Santa Fe Springs, California (site). The multi-depth soil gas survey included the installation and sampling of ten (10) 5-foot and ten (10) 15-foot soil gas sampling probes. Soil gas samples were analyzed on-site for volatile organic compounds (VOCs) including halogenated and aromatic hydrocarbons and for total volatile petroleum hydrocarbons (TVPHs) quantitated as kerosene. The soil gas survey was performed in general accordance with Los Angeles Regional Water Quality Control Board (LARWQCB) protocols dated February 25, 1997. This multi-depth soil gas survey report was prepared based on soil gas analyses data collected during the survey.

2.0 OBJECTIVES OF THE SOIL GAS SURVEY

The objectives of the multi-depth soil gas survey were to:

- Aid in identifying potential vadose zone source areas of VOCs including halogenated and aromatic hydrocarbons and TVPHs quantitated as kerosene.
- Assess the limited lateral and vertical extent of VOCs and TVPHs quantitated as kerosene in surficial soils.

Soil gas sampling is a monitoring technique for the presence of VOCs in soil and should be used in conjunction with other site-specific data. Soil gas sampling is limited in its applications depending on site conditions. Some factors affecting the distribution of VOCs in the subsurface are listed in Appendix A.

3.0 RATIONALE FOR THE LOCATIONS OF SAMPLING SITES

Soil gas sampling locations were selected and cleared of underground utilities by representatives of Environmental Strategies Corporation. The approximate locations of the soil gas probes are shown on Figure 1.

4.0 METHODS AND PROCEDURES

Field methods and procedures used to perform the multi-depth soil gas survey are described in this section.

4.1 SOIL GAS PROBE INSTALLATION AND COMPLETION

Construction details of a typical soil gas sampling probe are shown in Figure 2. Soil gas probes were installed using either a percussion-hammer or hydraulic-ram. Once a probe was installed to the desired depth, the hollow probe drive-rod was withdrawn, leaving the steel probe point and Nylaflow™ sampling tube in the subsurface. Clean, graded (#2/12), kiln dried, Lonestar Monterey sand was poured around the perforated section of Nylaflow™ tubing to allow for diffusion of soil vapors. The remaining annulus was filled with hydrated bentonite/cement slurry to slightly below grade. The probe point and Nylaflow™ sampling tube were left in place (dedicated) as a long-term soil gas monitoring point. The sampling tube was plugged with a stainless-steel machine-screw, folded over, and pushed down-hole until slightly below grade. The remaining depression was filled with concrete patch material and finished flush with surrounding paving material.

4.2 SOIL GAS SAMPLE COLLECTION AND HANDLING

Soil gas samples were collected using the soil gas sampling system shown in Figure 3. The soil gas sampling system was constructed of stainless-steel, glass, Nylaflow™, and Teflon™ components. Instrumentation associated with the sampling system included a calibrated flow-meter and vacuum gauge. Vacuum integrity of the sampling system was tested prior to, and after the soil gas survey using leak-down testing methods. The soil gas sampling system and instrumentation were operating as required on both occasions. Soil gas sampling probes were purged at a flow of approximately 100 milliliters per minute (ml/min).

A site-specific probe purge volume versus sample concentration test was initially performed to evaluate the appropriate volume of gas to be purged from each probe prior to sample collection. Time-series sampling of at least one probe was conducted to evaluate trends in soil gas concentrations as a function of purge volume. After purging, soil gas samples were withdrawn from the sample stream using a glass syringe fitted with a disposable needle and Mininert™ gas-tight valve. Soil gas samples were immediately injected into a gas chromatograph (GC) after collection.

4.3 SOIL GAS SAMPLE ANALYSES (HALOGENATED AND AROMATIC HYDROCARBONS)

Soil gas samples were analyzed in the field using a mobile laboratory equipped with a Varian-3400 GC configured with a photo-ionization detector (PID) and an electrolytic conductivity detector (ELCD) placed in series. The GC-PID/ELCD was used to analyze soil gas samples using a method similar to EPA Method 8021. The detection limit for EPA Method 8021 compounds is one microgram per liter (µg/L).

4.4 SOIL GAS SAMPLE ANALYSES (TOTAL VOLATILE PETROLEUM HYDROCARBONS QUANTITATED AS KEROSENE)

Soil gas samples were analyzed in the field for TVPHs using a mobile laboratory equipped with a Varian-3400 GC configured with a flame ionization detector (FID). This detector was used to analyze soil gas samples for TVPHs quantitated as kerosene using a method similar to EPA Method 8015 modified for fuel hydrocarbons. The detection limit for TVPHs quantitated as kerosene is 50 µg/L.

4.5 SURROGATE COMPOUNDS

Two (2) surrogate compounds were added to all analyzed samples. Surrogate compound concentrations were within the initial calibration range. The percent recovery of the surrogate compounds were calculated and reported with soil gas sample analyses results. The acceptance goal for surrogate compound recovery is ± 25 percent difference from the true concentration of the surrogate compounds. Surrogate compounds added to each sample analyses run included Fluorobenzene (PID) and cis-1,3-Dichloropropene (PID and ELCD), each at a true concentration of 5,000 µg/L.

4.6 INITIAL MULTI-POINT EQUIPMENT CALIBRATION (HALOGENATED AND AROMATIC HYDROCARBONS)

A summary of the Quality Assurance/Quality Control (QA/QC) analyses is presented in Table 1. The GC-PID/ELCD used for soil gas analyses was calibrated using high-purity solvent-based standards obtained from certified vendors. GC-PID/ELCD calibration standards were prepared in high-purity methanol solvent. GC-PID/ELCD calibration using solvent-based standards was performed using varying injection volumes of the undiluted solvent-based standard. If necessary, stock solvent-based standards were diluted to an appropriate concentration. Diluted standards were prepared by introducing a known volume of stock solvent-based standard into a known volume of high-purity solvent.

Initial calibration was performed for 25 target compounds. The GC-PID/ELCD was calibrated using three standard injections to establish a three-point calibration curve. The lowest standard was not higher than five times the method detection limit (or 5 µg/L). The percent relative standard deviation (%RSD) of the response factor (RF) for each target compound did not exceed 20 percent except for Trichlorofluoromethane (Freon™-11), Dichlorodifluoromethane (Freon™-12), 1,1,2-Trichloro-Trifluoroethane (Freon™-113), Chloroethane (CE), and Vinyl Chloride (VC), which did not exceed 30 %RSD. Identification and quantitation of compounds in the field was based on calibration under the same analytical conditions as for three-point calibration.

4.7 INITIAL MULTI-POINT EQUIPMENT CALIBRATION (TOTAL VOLATILE PETROLEUM HYDROCARBONS QUANTITATED AS KEROSENE)

The chromatographic equipment used for TVPHs soil gas analyses was calibrated using a kerosene standard prepared by injecting one microliter (μL) of fuel stock into a 125 milliliter (mL) glass gas sample bottle with TeflonTM stopcocks and a chromatographic septum. This procedure results in a kerosene standard of 6,164 $\mu\text{g/L}$. Each fuel prepared in this manner results in a gas standard of different concentration depending on the fuels molecular weight.

Initial calibration was performed using three standard injections of varying volume to establish a three-point calibration curve. This typically includes 100 μL , 200 μL , and 400 μL injections of the gas-phase fuel standard. The three-point calibration was used to establish an average response factor (ARF) for use in quantitated fuel concentrations in field samples. Identification and quantitation of TVPHs in the field was based on calibration under the same analytical conditions as for three-point calibration.

4.8 LABORATORY CONTROL SAMPLE

A laboratory control sample (LCS) from a different source or lot number other than the initial calibration standard was used to verify the true concentration of the initial calibration standard. The LCS included 25 target compounds. The RF for each compound in the LCS (except for FreonTM-11, -12, and -113, CE, and VC) did not exceed 15 percent difference from the Average Response Factor (ARF) established from the initial calibration. The RF for FreonTM-11, -12, and -113, CE, and VC did not exceed 25 percent of the initial calibration.

4.9 DAILY MID-POINT CALIBRATION CHECK (HALOGENATED AND AROMATIC HYDROCARBONS)

Daily field calibration of the GC-PID/ELCD consisted of a mid-point calibration using a standard containing 14 target compounds. The daily mid-point calibration check included the 12 target compounds specified in the LARWQCB requirements dated February 1997. The RF of each compound (except for FreonTM-11, -12, and -113, CE, and VC) was within 15 percent of the average RF from the initial calibration. The RF for FreonTM-11, -12, and -113, CE, and VC was within 25 percent of the initial calibration. If these criteria were not met, the GC-PID/ELCD was recalibrated. Daily calibration was performed prior to the first soil gas sample analysis of the day. One-point calibration was performed for all compounds detected at the site to ensure accurate quantitation. Subsequent calibration episodes, if deemed necessary, consisted of at least one injection of the standard exhibiting a similar detector response as that of samples encountered in the field.

4.10 DAILY MID-POINT CALIBRATION CHECK (TOTAL VOLATILE PETROLEUM HYDROCARBONS QUANTITATED AS KEROSENE)

Once in the field, daily calibrations of the GC consisted of a mid-point calibration analysis using a standard prepared the same way as the standard used for the initial multi-point calibration. The RF was within 20 percent difference of the average RF from the initial calibration. If this criteria was not met, the GC was re-calibrated. Daily calibration was performed prior to the first sample analysis of the day. Subsequent calibration episodes, if deemed necessary, consisted of at least one injection of the standard exhibiting a similar detector response as that of samples encountered in the field.

4.11 BLANK INJECTIONS

The syringes used for soil gas sample collection were periodically filled with ambient air or high-purity carrier-grade gas from a compressed gas cylinder. The ambient air or high-purity gas was injected directly into the gas chromatograph. The blank injections served to detect potential cross-contamination of the sampling equipment and to verify the effectiveness of decontamination procedures.

4.13 DECONTAMINATION

Probe installation and sampling equipment in contact with site soil or soil gas sample streams were decontaminated prior to collection of each soil gas sample. Decontamination of probe installation equipment was performed by immersion and scrubbing in Alconox™ detergent solution, rinsing in tap-water, rinsing in VOC-free water, followed by air drying. Decontamination of soil gas sampling equipment was performed by baking at elevated temperatures (<160° Celsius) inside the GC oven.

5.0 SOIL GAS SURVEY RESULTS

Soil gas samples collected at the site contained concentrations of halogenated and aromatic hydrocarbons and TVPHs quantitated as kerosene. A summary of field analyses results is provided in Table 2. Detected concentrations of halogenated and aromatic VOCs (sum of halogenated and aromatic VOCs (Total VOCs)) and TVPHs quantitated as kerosene are plotted on Figure 4. Field analyses reports, calibration data, and method detection limits for halogenated and aromatic hydrocarbons are provided in Appendix B. Field analyses reports, calibration data, and method detection limits for total volatile petroleum hydrocarbons quantitated as kerosene are provided in Appendix C.

TABLES

TABLE 1

**SUMMARY OF
QUALITY ASSURANCE/QUALITY CONTROL ANALYSES
FOR SOIL GAS SURVEYS**

File: SGSQAQCT1

CALIBRATION AND LABORATORY CONTROL SAMPLES

DESCRIPTION	FREQUENCY	PRECISION GOAL %RSD or %DIFF
INITIAL THREE-POINT CALIBRATION (25 Target Compounds)	At the beginning of the soil gas survey, unless the RPDs of the initial laboratory check sample or daily mid-point calibration check samples exceed their goals.	20-30 (1)
INITIAL LABORATORY CONTROL SAMPLE (LCS) (25 Target Compounds)	At the beginning of the survey, following the initial three-point calibration.	15 (2)
DAILY MID-POINT CALIBRATION CHECK (12 Target Compounds)	At the beginning of each day.	15 (3) 25 (3)
LAST GC TEST RUN	At the end of each day	20 (4)

FIELD CONTROL SAMPLES

DESCRIPTION	FREQUENCY	PRECISION GOAL
BACKGROUND SAMPLE (4)	Minimum one per day.	N/A
SYRINGE BLANK (4)	Minimum one per day.	N/A

%RSD = Percent Relative Standard Deviation calculated based on the initial three-point calibration.

%DIFF = Percent Difference between the response factor obtained from the LCS, the daily mid-point calibration, or the last GC test run and the average response factor initially calculated based on the three-point calibration.

N/A = Not applicable.

(1) The %RSD goal for the initial three-point calibration will be 20 percent for all compounds except for Freon 11, Freon 12, Freon 113, chloroethane, and vinyl chloride for which the %RSD goal is 30 percent.

(2) The %DIFF goal for the LCS will be 15 percent for all target compounds.

(3) The %DIFF goal for the daily mid-point calibration check will be 15 percent for all compounds except for Freon 11, Freon 12, Freon 113, chloroethane, and vinyl chloride for which the %DIFF goal is 25 percent.

(4) A syringe/background sample will be analyzed using ambient air. If volatile organic compounds (VOCs) are not detected, the ambient air sample will represent the background sample and syringe blank. If VOCs are detected in the ambient air sample, a syringe blank will be analyzed using ultra-high-purity helium or nitrogen gas.

TABLE 2

SUMMARY OF FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES

DIVERSEY CORPORATION
8921 DICE ROAD
SANTA FE SPRINGS, CALIFORNIA

10/21/97

File: 1519.T2

PROBE NUMBER	DATE OF SAMPLING	PROBE DEPTH (ft)	SAMPLING EVENTS	1,1-DCE (µg/L)	trans-1,2-DCE (µg/L)	cis-1,2-DCE (µg/L)	TCE (µg/L)	PCE (µg/L)	TOLUENE (µg/L)	EBENZ (µg/L)	m+p-XYL (µg/L)	o-XYL (µg/L)	TVPH as KEROSENE (µg/L)
SG1-5	10/9/97	5	3	ND<1	ND<1	ND<1	ND<1	ND<1	2	ND<1	ND<1	ND<1	ND<50
SG1-15	10/9/97	15	1	ND<1	ND<1	ND<1	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG2-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG2-15	10/9/97	15	1	ND<1	ND<1	ND<1	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG3-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG3-15	10/9/97	15	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG4-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	1	ND<1	ND<50
SG4-15	10/9/97	15	1	2	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG5-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	2	ND<1	3	51
SG5-15	10/9/97	15	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	1	ND<1	ND<50
SG6-5	10/9/97	5	1	ND<1	ND<1	5	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG6-15	10/9/97	15	1	ND<1	ND<1	2	12	1	ND<1	ND<1	ND<1	2	52
SG7-5	10/9/97	5	1	ND<1	ND<1	4	3	ND<1	2	ND<1	1	ND<1	ND<50
SG7-15	10/9/97	15	1	ND<1	ND<1	ND<1	13	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG8-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	2	ND<1	ND<50
SG8-15	10/9/97	15	1	17	ND<1	ND<1	3	5	ND<1	ND<1	ND<1	ND<1	ND<50
SG9-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG9-15	10/9/97	15	1	6	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50
SG10-5	10/9/97	5	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	1	ND<1	ND<50
SG10-15	10/9/97	15	1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	ND<50

ft = Feet below grade

µg/L = Micrograms per liter

1,1-DCE = 1,1-Dichloroethene

trans-1,2-DCE = trans-1,2-Dichloroethene

cis-1,2-DCE = cis-1,2-Dichloroethene

TCE = Trichloroethene

PCE = Tetrachloroethene

EBENZ = Ethylbenzene

m+p-XYL = meta and para-Xylene

o-XYL = ortho-Xylene

TVPH = Total Volatile Petroleum Hydrocarbons

ND = Not Detected; sample is below the reported limit of quantitation.

FIGURES

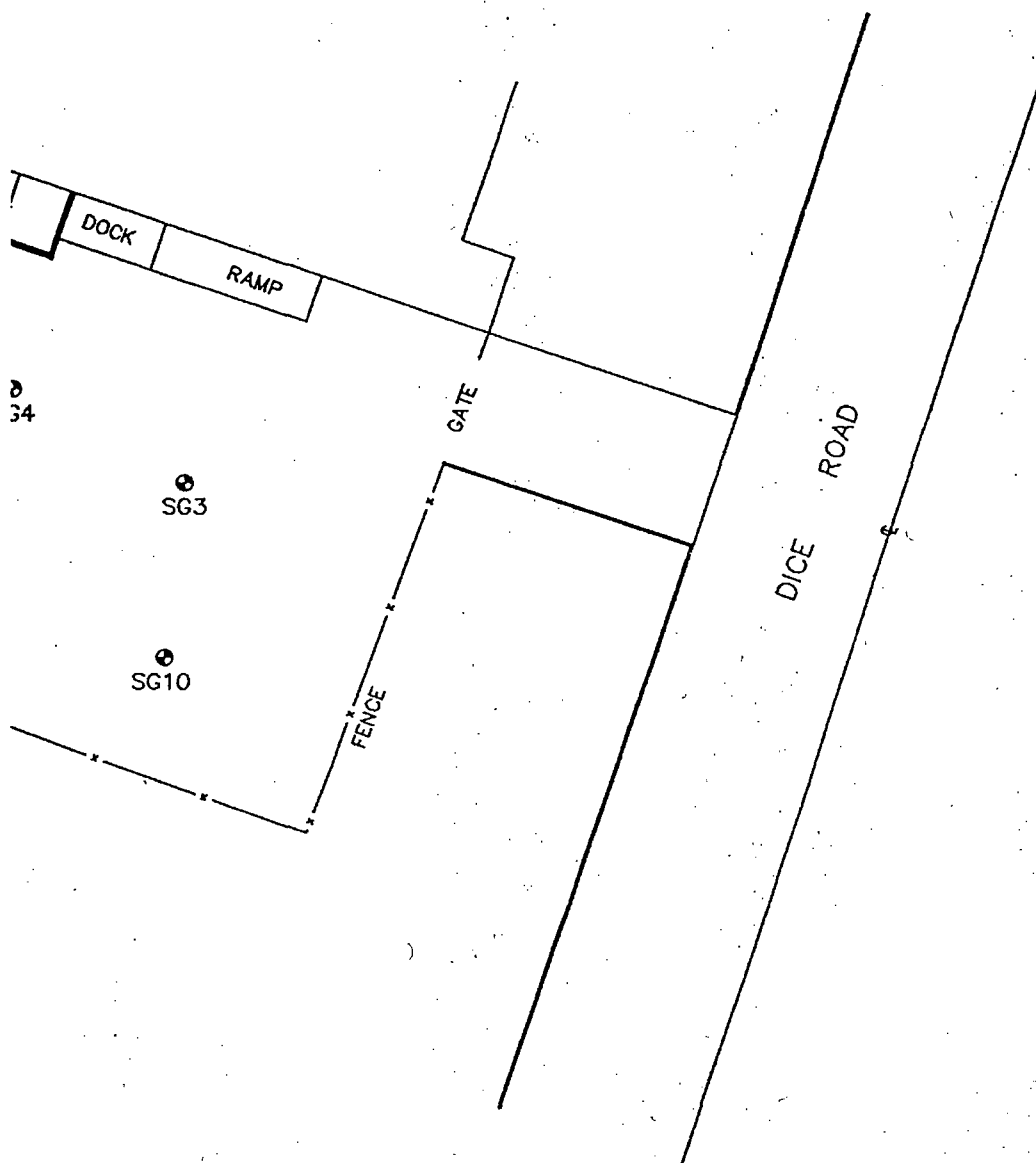


FIGURE 1

APPROXIMATE LOCATIONS OF
SOIL GAS SAMPLING PROBES

DIVERSEY CORPORATION
8921 DICE ROAD
SANTA FE SPRINGS, CALIFORNIA
EST1519/MULTI-DEPTH SOIL GAS SURVEY REPORT
DRAWN BY: JST SCALE: AS SHOWN DATE: 10-22-1997

FORMER DIVERSEY CORP.
WAREHOUSE

LOCATION OF FORMER
SUMP AND
SOIL VAPOR
EXTRACTION UNIT

SECONDARY
CONTAINMENT

SG6

SG5

SG7

SG8

PROP. LINE FENCE

SG1

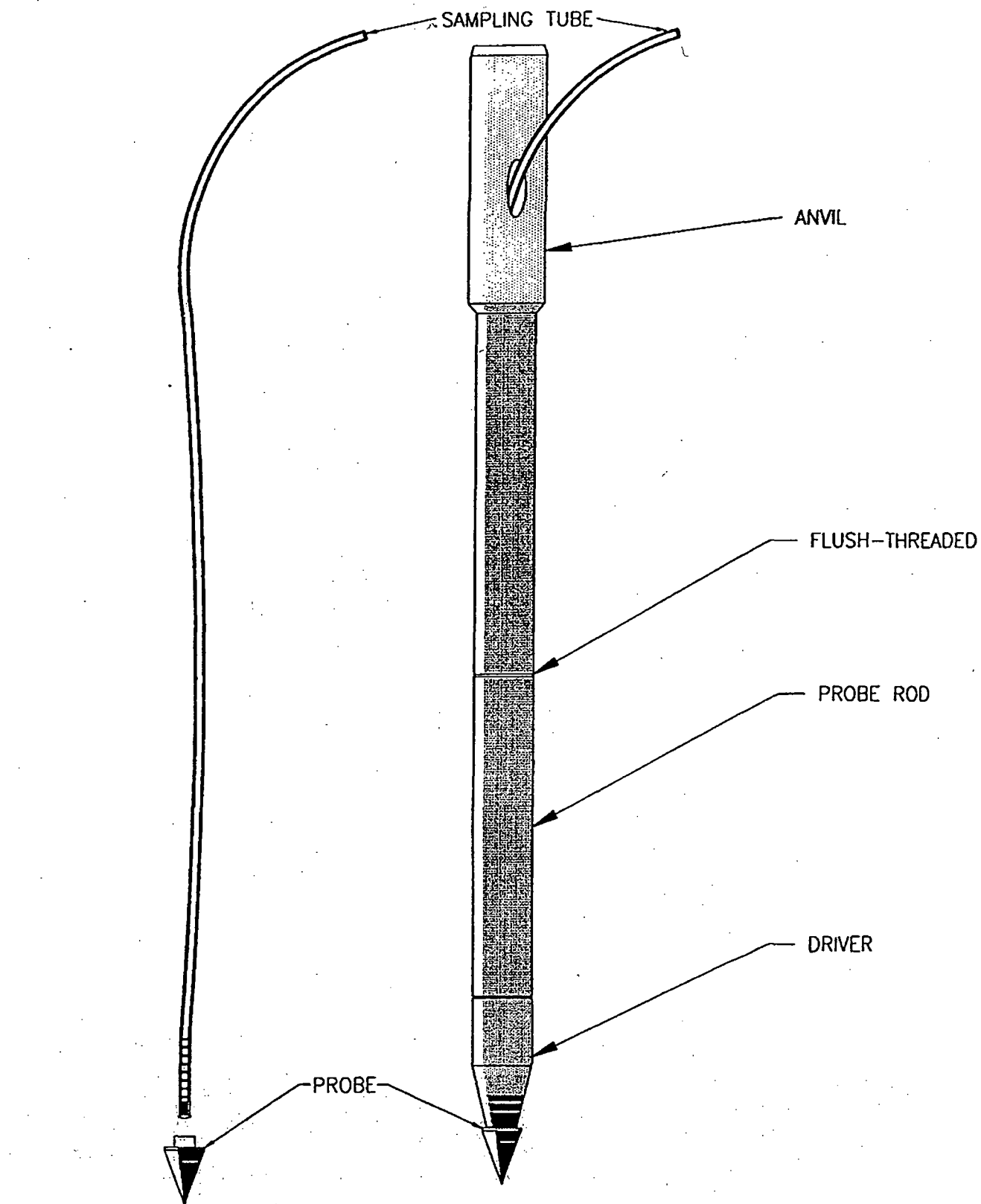
SG

EXPLANATION

SG1

APPROXIMATE LOCATION OF A 5- AND 15-FOOT SOIL GAS
SAMPLING PROBE WITH ASSOCIATED PROBE NUMBER

SOURCE OF BASE MAP: C.T.K. INC.



NOTE: NOT TO SCALE

FIGURE 2

SOIL GAS SAMPLING PROBE

DIVERSEY CORPORATION
8921 DICE ROAD

SANTA FE SPRINGS, CALIFORNIA

EST1519/MULTI-DEPTH SOIL GAS SURVEY REPORT

DRAWN BY: JST

SCALE: AS SHOWN

DATE: 10-21-97

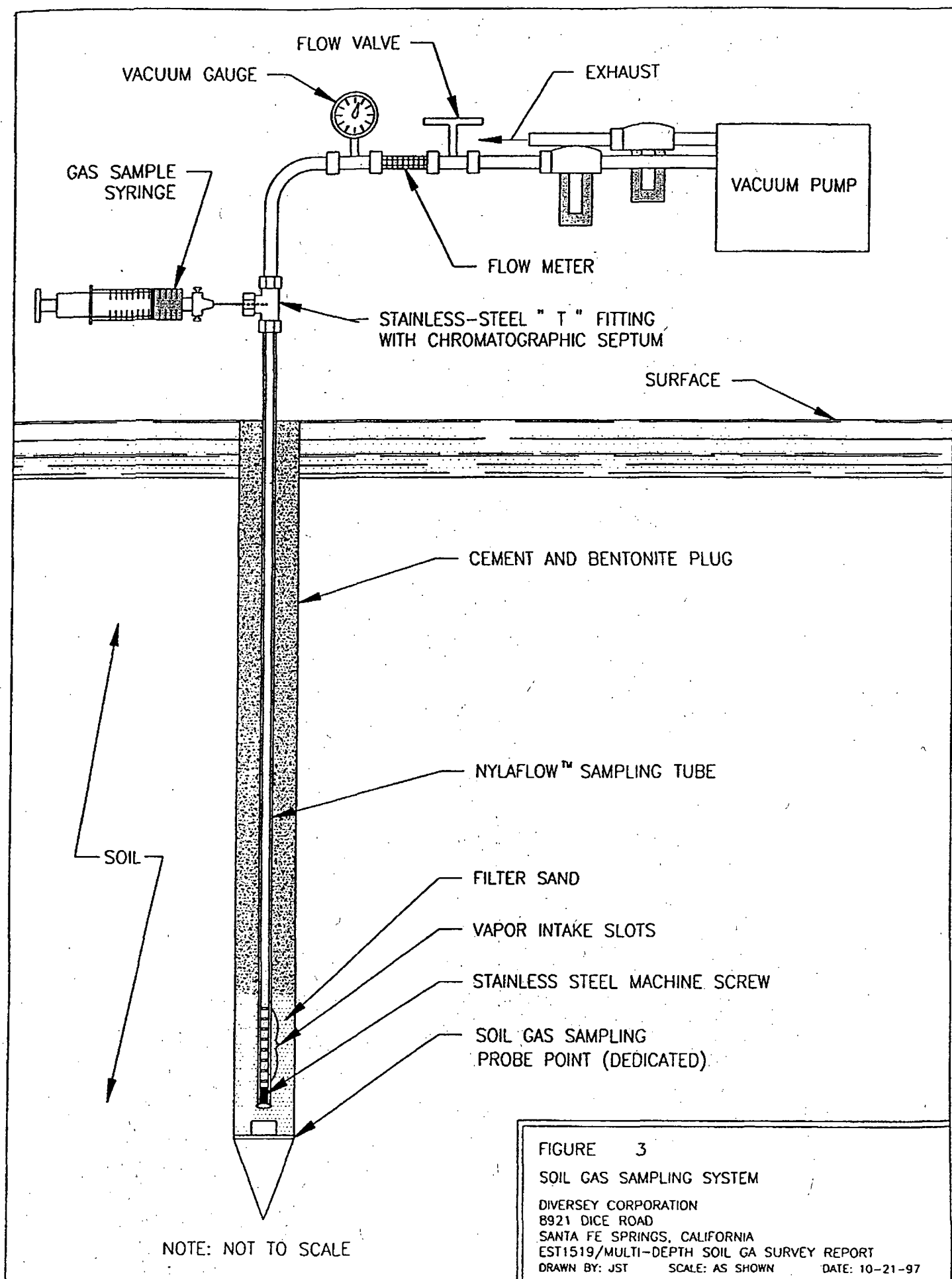


FIGURE 3

SOIL GAS SAMPLING SYSTEM

DIVERSEY CORPORATION

8921 DICE ROAD

SANTA FE SPRINGS, CALIFORNIA

EST1519/MULTI-DEPTH SOIL GA SURVEY REPORT

DRAWN BY: JST

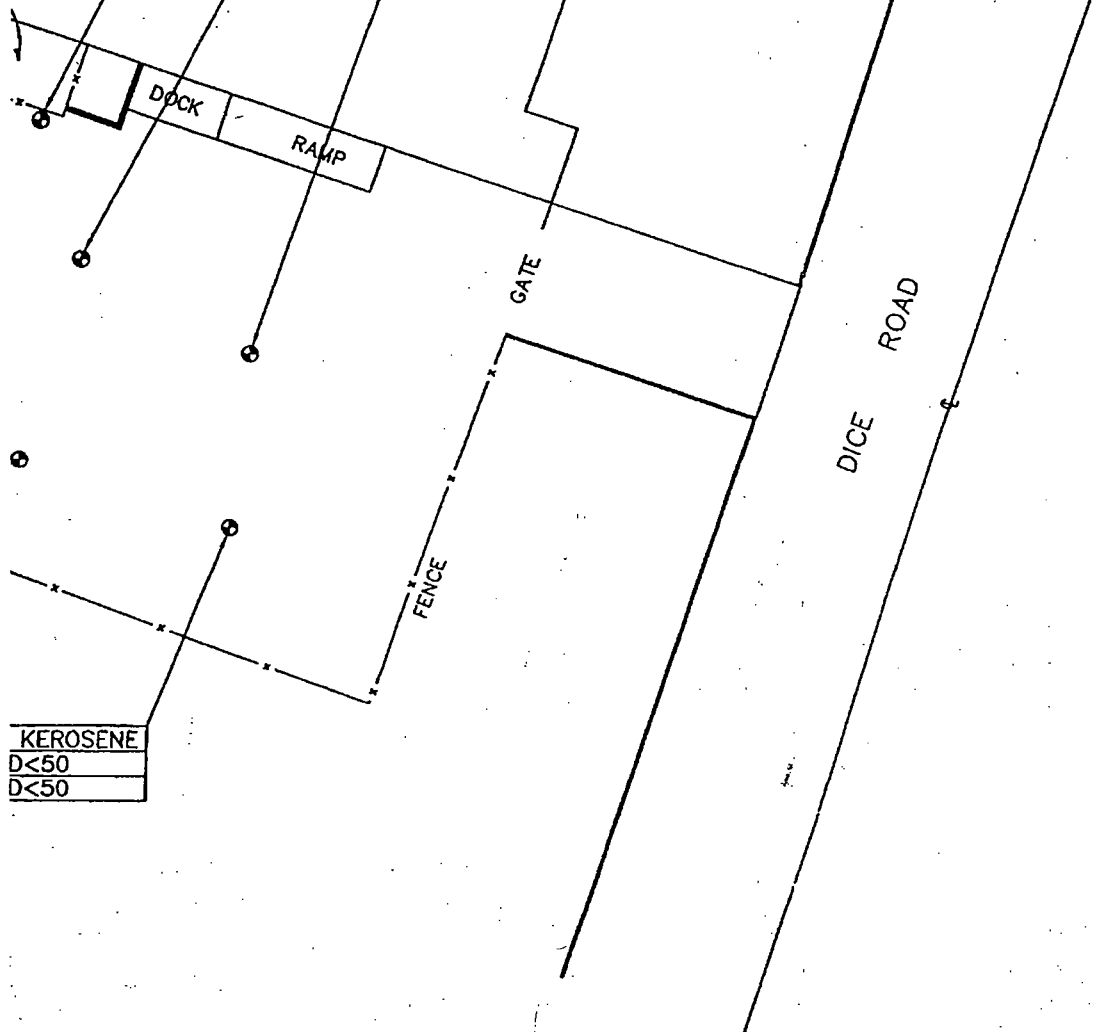
SCALE: AS SHOWN

DATE: 10-21-97

SG2	TOTAL VOC's	TVPH AS KEROSENE
5'	ND<1	ND<50
15'	1	ND<50

SG4	TOTAL VOC's	TVPH AS KEROSENE
5'	1	ND<50
15'	2	ND<50

SG3	TOTAL VOC's	TVPH AS KEROSENE
5'	ND<1	ND<50
15'	ND<1	ND<50



KEROSENE
D<50
D<50



APPROXIMATE SCALE IN FEET

ROSENE)
AS



FIGURE 4

DETECTED CONCENTRATIONS OF TOTAL VOLATILE ORGANIC COMPOUNDS AND TOTAL VOLATILE PETROLEUM HYDROCARBONS AS KEROSENE

DIVERSEY CORPORATION
8921 DICE ROAD
SANTA FE SPRINGS, CALIFORNIA
EST1519/MULTI-DEPTH SOIL GAS SURVEY REPORT
DRAWN BY: JST SCALE: AS SHOWN DATE: 10-22-1997

SG1	TOTAL VOC's	TVPH AS KEROSENE
5'	2	ND<50
15'	1	ND<50

FORMER DIVERSEY CORP.
WAREHOUSE

LOCATION OF FORME
SUMP AND
SOIL VAPOR
EXTRACTION UNIT

SECONDARY
CONTAINMENT

SG6	TOTAL VOC's	TVPH AS KEROSENE
5'	5	ND<50
15'	17	52

SG5	TOTAL VOC's	TVPH AS KEROSENE
5'	5	51
15'	1	ND<50

SG7	TOTAL VOC's	TVPH AS KEROSENE
5'	10	ND<50
15'	13	ND<50

SG8	TOTAL VOC's	TVPH AS KEROSENE
5'	2	ND<50
15'	25	ND<50

PROP. LINE FENCE

SG9	TOTAL VOC's	TVPH AS KEROSENE
5'	ND<1	ND<50
15'	6	ND<50

SG10	TOTAL VOC's	TVPH AS
5'	1	
15'	ND<1	

EXPLANATION

- APPROXIMATE LOCATION OF A SOIL GAS SAMPLING PROBE WITH ASSOCIATED PROBE NUMBER, PROBE DEPTH AND DETECTED CONCENTRATIONS OF:
TOTAL VOLATILE ORGANIC COMPOUNDS (TOTAL VOC's)
TOTAL VOLATILE PETROLEUM HYDROCARBONS AS KEROSENE (TVPH AS KI
DETECTIONS MEASURED IN MICROGRAMS OF COMPOUND PER LITER OF C
ND NOT DETECTED; SAMPLE IS BELOW THE REPORTED LIMIT OF QUANTITATIO

SOURCE OF BASE MAP: C.T.K. INC.

APPENDICES

Appendix A

FACTORS AFFECTING THE GAS-PHASE DISTRIBUTION OF VOCs IN THE SUBSURFACE

FACTORS AFFECTING THE GAS-PHASE DISTRIBUTION OF VOCs IN THE SUBSURFACE

Soil and groundwater contamination by volatile organic compounds (VOCs) can often be detected by analyzing trace gases in soil just below ground surface. This technique is possible because many VOCs will volatilize and move by molecular diffusion away from source areas toward regions of lower concentrations. A gas phase concentration gradient from the source to adjacent areas is established.

The following factors affect the transport and gas phase distribution of VOCs in the subsurface.

1. The liquid-gas partitioning coefficient of the compounds of interest (the "volatility" of the compound).
2. The vapor diffusivity, which is a measure of how quickly an individual compound "spreads out" within a volume of gas.
3. Retardation of the individual compounds as they migrate in the soil gas. Retardation may be due to degradation, adsorption on the soil matrix, tortuosity of the soil profile, or entrapment in unconnected pores.
4. The presence of impeding layers, wetting fronts of freshwater, or perched water tables, between the regional water table and ground surface.
5. The presence of soil moisture around man-made structures such as clarifiers and sumps may suppress volatilization and diffusion of VOCs resulting in false negative or low soil gas concentrations.
6. The presence of contaminants from localized spills or in the ambient air.
7. Movement of soil gas in response to barometric pressure changes.
8. The preferential migration of gas through zones of greater permeability (e.g. natural lithologic variation or back-fill of underground utilities).
9. Soil temperature.

At most sites, many of these factors are unknown or poorly understood. Because of this uncertainty, soil gas sampling should be used in conjunction with other site-specific data.

Appendix B

**FIELD ANALYSES RESULTS FOR
HALOGENATED AND AROMATIC HYDROCARBONS**

**(INCLUDING CALIBRATION REPORTS, QUALITY CONTROL REPORTS,
AND EXPLANATION OF METHOD DETECTION LIMITS)**

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
DIVERSEY CORPORATION, SANTA FE SPRINGS, CALIFORNIA
25-TARGET COMPOUND LIST

MODEL CO-11-10/9/97

FILE: 1519ASGRP

SAMPLE ID	SG1-5	SG1-5	SG1-5	SG1-15	SG2-5	SG2-15	SG3-15	SG3-5
DATE	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97
TIME	10:21	10:48	11:13	11:38	12:02	12:24	13:17	13:45
INJECTION VOLUME (µl)	500	500	500	500	500	500	500	500
PURGE VOLUME (ml)	100	200	400	200	100	200	200	100
VACUUM (in. Hg)	ND	ND	ND	ND	ND	ND	ND	ND
DILUTION FACTOR	1	1	1	1	1	1	1	1
REPORTABLE LIMIT (µg/L)	1	1	1	1	1	1	1	1
COMMENTS	RT	ARF						
Dichlorodifluoromethane	4:72	5.99E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	4:97	1.68E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	5:48	5.86E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	5:77	3.24E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	6:15	2.09E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethene	6:42	3.89E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Methylene chloride	6:87	4.23E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	7:15	4.14E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	7:57	5.36E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	8:18	4.86E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroform	8:37	7.80E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1-Trichloroethane	8:82	6.11E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	9:15	4.26E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Benzene	9:30	5.02E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	9:23	1.21E+06	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Fluorobenzene (Surrogate)	9:47	3.27E+04	1.98E+02 121%	1.42E+02 87%	1.54E+02 94%	1.58E+02 97%	1.40E+02 86%	1.55E+02 96%
Trichloroethene	10:00	6.62E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,3-Dichloropropene (Surrogate)	11:15	3.48E+05	2.16E+03 124%	1.48E+03 85%	1.78E+03 102%	1.82E+03 104%	1.63E+03 93%	1.73E+03 99%
Toluene	11:53	4.93E+04	3.90E+01 2	0.00E+00 ND	3.20E+01 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloroethane	12:10	5.66E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	12:55	6.06E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,1,2-Tetrachloroethane	13:35	6.04E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	13:50	3.88E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta and para-Xylene	14:00	5.10E+05	3.80E+01 ND	4.90E+01 ND	5.10E+01 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	14:55	4.09E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	15:60	5.63E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

Concentrations reported in micrograms per liter (µg/L)

ND = Not detected

ND< = Not detected above the reported limit of quantitation

RT = Retention time

µl = Microliter

ml = Milliliter

in. Hg = Inches of mercury

ARF = Average response factor

* = Exceeds quantitation range

NA = Not Analyzed

10/9/97

ANALYST : David M. Pride

1

REVIEWED BY : Patrick Lao

P.L.

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
DIVERSEY CORPORATION, SANTA FE SPRINGS, CALIFORNIA
25 TARGET COMPOUND LIST

FILE: 10/9/97

FILE: 15194SCR.P

SAMPLE ID			SG4-5	SG4-15	SG5-5	SG5-15	SG6-5	SG6-15	SG7-5	SG7-15
DATE			10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97
TIME			14:13	14:36	14:59	15:24	15:24	16:09	16:35	16:59
INJECTION VOLUME (μl)			500	500	500	500	500	500	500	500
PURGE VOLUME (ml)			100	200	100	200	100	200	100	200
VACUUM (in. Hg)			ND	ND	ND	ND	ND	ND	ND	ND
DILUTION FACTOR			1	1	1	1	1	1	1	1
REPORTABLE LIMIT (μg/L)			1	1	1	1	1	1	1	1
COMMENTS										
	RT	ARF								
Dichlorodifluoromethane	4.72	5.99E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Vinyl chloride	4.97	1.68E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chloroethane	5.48	5.86E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichlorofluoromethane	5.77	3.24E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,2-Trichloro-trifluoroethane	6.15	2.09E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethene	6.42	3.89E+05	0.00E+00	4.83E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.10E+01
Methylene chloride	6.87	4.23E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
trans-1,2-Dichloroethene	7.15	4.14E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethane	7.57	5.36E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cis-1,2-Dichloroethene	8.18	4.86E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chloroform	8.37	7.80E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,1-Trichloroethane	8.82	6.11E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon tetrachloride	9.15	4.26E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	9.30	5.02E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloroethane	9.23	1.21E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluorobenzene (Surrogate)	9.47	3.27E+04	1.51E+02	1.70E+02	1.68E+02	1.59E+02	1.64E+02	1.50E+02	1.67E+02	1.36E+02
Trichloroethene	10.00	6.62E+05	92%	104%	103%	97%	100%	92%	102%	83%
cis-1,3-Dichloropropene (Surrogate)	11.15	3.48E+05	0.00E+00	7.20E+01	0.00E+00	0.00E+00	1.39E+02	4.02E+03	1.10E+03	4.47E+03
Toluene	11.63	4.93E+04	1.71E+03	2.00E+03	1.90E+03	1.86E+03	1.84E+03	1.77E+03	1.88E+03	1.47E+03
1,1,2-Trichloroethane	12.10	5.66E+05	98%	115%	109%	107%	106%	102%	96%	85%
Tetrachloroethene	12.65	6.06E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,1,2-Tetrachloroethane	13.95	6.04E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethylbenzene	13.90	3.88E+04	0.00E+00	0.00E+00	3.60E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
meta and para Xylene	14.00	1.08E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ortho Xylene	14.75	4.09E+04	0.00E+00	0.00E+00	5.70E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,2,2-Tetrachloroethane	15.60	5.63E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Concentrations reported in micrograms per liter (μg/L)
 ND = Not detected
 ND< = Not detected above the reported limit of quantitation
 RT = Retention time

μl = microliter
 ml = milliliter
 in. Hg = inches of mercury

ARF = average response factor
 * = exceeds quantitation range
 NA = Not Analyzed

10/9/97

TABLE B-1
HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
DIVERSEY CORPORATION, SANTA FE SPRINGS, CALIFORNIA
25-TARGET COMPOUND LIST

PIDELCO #1, 10/9/97

SAMPLE ID	SG8-5	SG8-15	SG9-5	SG9-15	SG10-5	SG10-15	
DATE	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	
TIME	17:22	18:04	18:22	18:44	19:06	19:25	
INJECTION VOLUME (μl)	500	500	500	500	500	500	
PURGE VOLUME (ml)	100	200	100	200	100	200	
VACUUM (in. Hg)	ND	ND	ND	ND	ND	ND	
DILUTION FACTOR	1	1	1	1	1	1	
REPORTABLE LIMIT (μg/L)	1	1	1	1	1	1	
COMMENTS	RT	ARF					
Dichlorodifluoromethane	4:72	5.99E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Vinyl chloride	4:97	1.68E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chloroethane	5:48	5.86E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichlorofluoromethane	5:77	3.24E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,2-Trichloro-trifluoroethane	6:15	2.09E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethene	6:42	3.89E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methylene chloride	6:87	4.23E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
trans-1,2-Dichloroethene	7:15	4.14E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1-Dichloroethane	7:57	5.36E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cis-1,2-Dichloroethene	8:18	4.86E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Chloroform	8:37	7.80E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,1-Trichloroethane	8:82	6.11E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Carbon tetrachloride	9:15	4.26E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	9:30	5.02E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2-Dichloroethane	9:23	1.21E+06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Fluorobenzene (Surrogate)	9:47	3.27E+04	1.49E+02	1.68E+02	1.60E+02	1.47E+02	1.52E+02
Trichloroethene	10:00	6.62E+05	91%	103%	98%	90%	93%
cis-1,3-Dichloropropene (Surrogate)	11:15	3.48E+05	6.40E+01	1.02E+03	8.40E+01	6.00E+01	0.00E+00
Toluene	11:53	4.93E+04	1.62E+03	1.85E+03	1.82E+03	1.63E+03	1.64E+03
1,1,2-Trichloroethane	12:10	5.66E+05	93%	106%	104%	94%	94%
Tetrachloroethene	12:65	6.06E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,1,2-Tetrachloroethane	13:95	6.04E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethylbenzene	13:30	3.86E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
meta and para-Xylene	14:00	1.08E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ortho-Xylene	14:75	4.09E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,1,2,2-Tetrachloroethane	15:50	5.63E+05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Concentrations reported in micrograms per liter (μg/L)
 ND = Not detected
 ND< = Not detected above the reported limit of quantitation
 RT = Retention time

μl = microliter
 ml = milliliter
 in. Hg = inches of mercury

ARF = average res
 * = exceeds quant
 NA = Not Analyzed

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
SUBJECT SITE, CALIFORNIA

10/8/97

1519AQAC

TARGET COMPOUNDS		September 2, 1997							October 9, 1997					
		THREE-POINT CALIBRATION					LCS			MID-POINT			LAST RUN	
STANDARD CONC. (µg/L)		5000	5000	20000			5000		BLANK	5000		BLANK	5000	
INJECTION VOLUME (µL)		0.50	1.00	1.00			1.00		500	1.00		500	0.20	
COMPOUND/WEIGHT (µg)	RT	0.0025	0.0050	0.0200	ARF	%RSD	0.0050	RPD		0.0050	RPD		0.0010	%REC
Dichlorodifluoromethane	4:72	134	230	1604			253							
CF		5.36E+04	4.60E+04	8.02E+04	5.99E+04	30	5.06E+04	-16	ND	0.00E+00	NA	ND	0.00E+00	NA
Vinyl chloride	4:97	537	627	3246			771							
CF		2.15E+05	1.25E+05	1.62E+05	1.68E+05	27	1.54E+05	-8	ND	0.00E+00	NA	ND	0.00E+00	NA
Chloroethane	5:48	159	222	1355			282							
CF		6.36E+04	4.44E+04	6.78E+04	5.86E+04	21	5.64E+04	-4	ND	0.00E+00	NA	ND	0.00E+00	NA
Trichlorofluoromethane	5:77	782	1692	6432			1823							
CF		3.13E+05	3.38E+05	3.22E+05	3.24E+05	4	3.65E+05	12	ND	0.00E+00	NA	ND	0.00E+00	NA
1,1,2-Trichloro-trifluoroethane	6:15	458	1111	4414			1226							
CF		1.83E+05	2.22E+05	2.21E+05	2.09E+05	11	2.45E+05	17	ND	0.00E+00	NA	ND	0.00E+00	NA
1,1-Dichloroethene	6:42	862	2011	8400			1906							
CF		3.45E+05	4.02E+05	4.20E+05	3.89E+05	10	3.81E+05	-2	ND	4.04E+05	4	ND	0.00E+00	NA
Methylene chloride	6:87	867	2207	9592			2250							
CF		3.47E+05	4.41E+05	4.80E+05	4.23E+05	16	4.50E+05	6	ND	0.00E+00	NA	ND	0.00E+00	NA
trans-1,2-Dichloroethene	7:15	880	2005	9751			1891							
CF		3.52E+05	4.01E+05	4.88E+05	4.14E+05	17	3.78E+05	-9	ND	3.63E+05	-12	ND	0.00E+00	NA
1,1-Dichloroethane	7:57	1233	2820	11002			2510							
CF		4.93E+05	5.64E+05	5.50E+05	5.36E+05	7	5.02E+05	-6	ND	4.67E+05	-13	ND	0.00E+00	NA
cis-1,2-Dichloroethene	8:18	1147	2614	9532			2386							
CF		4.59E+05	5.23E+05	4.77E+05	4.86E+05	7	4.77E+05	-2	ND	4.52E+05	-7	ND	0.00E+00	NA
Chloroform	8:37	1850	3865	16542			3563							
CF		7.40E+05	7.73E+05	8.27E+05	7.80E+05	6	7.13E+05	-9	ND	0.00E+00	NA	ND	0.00E+00	NA
1,1,1-Trichloroethane	8:82	1411	3098	13005			2812							
CF		5.64E+05	6.20E+05	6.50E+05	6.11E+05	7	5.62E+05	-8	ND	5.41E+05	-11	ND	0.00E+00	NA
Carbon tetrachloride	9:15	1148	2048	8186			1868							
CF		4.59E+05	4.10E+05	4.09E+05	4.26E+05	7	3.74E+05	-12	ND	0.00E+00	NA	ND	0.00E+00	NA
Benzene (PID)	9:30	121	257	1014			238							
CF		4.84E+04	5.14E+04	5.07E+04	5.02E+04	3	4.76E+04	-5	ND	5.18E+04	3	ND	0.00E+00	NA
1,2-Dichloroethane	9:23	3124	7221	19020			6761							
CF		1.25E+06	1.44E+06	9.51E+05	1.21E+06	20	1.35E+06	11	ND	1.32E+06	8	ND	0.00E+00	NA
Fluorobenzene (Surrogate)	9:47	76	167	342			0							
CF		3.04E+04	3.34E+04	3.42E+04	3.27E+04	6	0.00E+00	NA	ND	0.00E+00	NA	ND	0.00E+00	NA
Trichloroethene	10:00	1548	3439	13591			3033							
CF		6.19E+05	6.88E+05	6.80E+05	6.62E+05	6	6.07E+05	-8	ND	5.82E+05	-12	ND	0.00E+00	NA
cis-1,3-Dichloropropene (Surrogate)	11:15	790	1789	3701			0							
CF		3.16E+05	3.58E+05	3.70E+05	3.48E+05	8	0.00E+00	NA	ND	0.00E+00	NA	ND	0.00E+00	NA
Toluene (PID)	11:63	120	250	996			233							
CF		4.80E+04	5.00E+04	4.98E+04	4.93E+04	2	4.66E+04	-5	ND	4.86E+04	-1	ND	0.00E+00	NA
1,1,2-Trichloroethane	12:10	1356	2916	11446			2607							
CF		5.42E+05	5.83E+05	5.72E+05	5.66E+05	4	5.21E+05	-8	ND	5.06E+05	-11	ND	0.00E+00	NA
Tetrachloroethene	12:65	1384	3110	12826			2687							
CF		5.54E+05	6.22E+05	6.41E+05	6.06E+05	8	5.37E+05	-11	ND	5.23E+05	-14	ND	0.00E+00	NA
1,1,1,2-Tetrachloroethane	13:95	1365	3305	12117			2977							
CF		5.46E+05	6.61E+05	6.06E+05	6.04E+05	10	5.95E+05	-1	ND	0.00E+00	NA	ND	0.00E+00	NA
Ethylbenzene (PID)	13:90	82	201	868			177							
CF		3.28E+04	4.02E+04	4.34E+04	3.88E+04	14	3.54E+04	-9	ND	0.00E+00	NA	ND	0.00E+00	NA
meta and para-Xylene (PID)	14:00	236	549	2386			517							
CF		9.44E+04	1.10E+05	1.19E+05	1.08E+05	12	1.03E+05	-4	ND	1.14E+05	5	ND	0.00E+00	NA
ortho-Xylene (PID)	14:75	97	202	870			190							
CF		3.88E+04	4.04E+04	4.35E+04	4.09E+04	6	3.80E+04	-7	ND	4.14E+04	1	ND	0.00E+00	NA
1,1,2,2-Tetrachloroethane	15:60	1285	3058	11274			2736							
CF		5.14E+05	6.12E+05	5.64E+05	5.63E+05	9	5.47E+05	-3	ND	0.00E+00	NA	ND	0.00E+00	NA

RT = Retention Time
 CF = Calibration Factor
 PID = Photo-ionization Detector

µg/L = Micrograms per Liter
 µL = Microliters
 µg = Microgram

ARF = Average Response Factor
 RPD = Relative Percent Difference
 LCS = Laboratory Control Sample

ND = Not Detected
 NA = Not Applicable

ANALYST: David M. Pride

REVIEWED BY: Patrick Lao

P.V.

TABLE B-3
ENVIRONMENTAL SUPPORT TECHNOLOGIES, INC.
REPORTABLE LIMITS FOR SOIL GAS SURVEYS

The Reportable Limit of Quantitation for Halogenated and Aromatic Hydrocarbons is 1.0 µg/L when the injection volume is 500 µL. Reportable limits for lesser injection volumes are listed below.

Injection Volume (µL)	Reportable Limit (µg/L)
500	1.0
250	2.0
200	2.5
100	5.0
80	6.3
60	8.3
50	10.0
40	12.5
20	25.0
10	50.0
5	100.0
1	500.0

Appendix C

**FIELD ANALYSES RESULTS FOR
TOTAL VOLATILE PETROLEUM HYDROCARBONS
QUANTITATED AS KEROSENE**

**(INCLUDING CALIBRATION REPORTS, QUALITY CONTROL REPORTS,
AND EXPLANATION OF METHOD DETECTION LIMITS)**

TABLE C-1

**TOTAL VOLATILE PETROLEUM HYDROCARBONS QUANTITATED AS KEROSENE
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
DIVERSEY CORPORATION, SANTA FE SPRINGS, CALIFORNIA**

FID #1 10/9/97
FILE: 1519AFSGRP

SAMPLE ID	SG1-5	SG1-5	SG1-5	SG1-15	SG2-5	SG2-15	SG3-15	SG3-5	SG4-5	SG4-15
DATE	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97
TIME	10:24	10:47	11:12	11:37	12:01	12:23	13:16	13:44	14:12	14:36
INJECTION VOLUME (μl)	500	500	500	500	500	500	500	500	500	500
PURGE VOLUME (ml)	100	200	400	200	100	200	200	100	200	200
VACUUM (in. Hg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DILUTION FACTOR	1	1	1	1	1	1	1	1	1	1
COMMENTS										

TOTAL VOLATILE PETROLEUM HYDROCARBONS QUANTITATED AS KEROSENE (μg/L)

Total Volatile Petroleum Hydrocarbons	ARF 1.22E+04	3.60E+01 ND<50	3.50E+01 ND<50	4.80E+01 ND<50	5.00E+00 ND<50	6.30E+01 ND<50	1.79E+02 ND<50	4.10E+01 ND<50	4.90E+01 ND<50	3.00E+01 ND<50	2.50E+01 ND<50
--	-----------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------

μl = microliter

ml = milliliter

in. Hg. = inches of mercury

ND = Not Detected; constituent is below the reportable limit of quantitation for this sample.

μg/L = Micrograms per Liter

ARF = Average Response Factor

NA = Not Analyzed

10/9/97

Analyst: David M. Pride

Reviewed by: Patrick Lao

TABLE C-1

**TOTAL VOLATILE PETROLEUM HYDROCARBONS QUANTITATED AS KEROSENE
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
DIVERSEY CORPORATION, SANTA FE SPRINGS, CALIFORNIA**

PID #1 10/9/97
FILE: 1519A.FSGRP

SAMPLE ID	SG5-5	SG5-15	SG6-5	SG6-15	SG7-5	SG7-15	SG8-5	SG8-15	SG9-5	SG9-15
DATE	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97	10/9/97
TIME	14:58	15:23	15:46	16:09	16:33	16:58	17:22	17:44	18:09	18:35
INJECTION VOLUME (μ l)	500	500	500	500	500	500	500	500	500	500
PURGE VOLUME (ml)	100	200	100	200	100	200	100	200	100	200
VACUUM (in. Hg)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DILUTION FACTOR	1	1	1	1	1	1	1	1	1	1
COMMENTS										

TOTAL VOLATILE PETROLEUM HYDROCARBONS QUANTITATED AS KEROSENE (μ g/L)

Total Volatile Petroleum Hydrocarbons	ARF 1.22E+04	3.12E+02 51	3.90E+01 ND<50	1.70E+01 ND<50	3.15E+02 52	6.20E+01 ND<50	8.90E+01 ND<50	6.40E+01 ND<50	3.10E+01 ND<50	2.40E+01 ND<50	1.80E+01 ND<50
--	-----------------	----------------	-------------------	-------------------	----------------	-------------------	-------------------	-------------------	-------------------	-------------------	-------------------

 μ l = microliter

ml = milliliter

in. Hg. = inches of mercury

ND = Not Detected; constituent is below the reportable limit of quantitation for this sample.

 μ g/L = Micrograms per Liter

ARF = Average Response Factor

NA = Not Analyzed

10/9/97

Analyst: David M. Pride

Reviewed by: Patrick Lao

P.L.

TABLE C-1

**TOTAL VOLATILE PETROLEUM HYDROCARBONS QUANTITATED AS KEROSENE
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
DIVERSEY CORPORATION, SANTA FE SPRINGS, CALIFORNIA**

FID #1 - 10/9/97
FILE: 1519AESGRP

SAMPLE ID	SG10-5	SG10-15	NA	NA	NA	NA	NA	NA	NA	NA
DATE	10/9/97	10/9/97	NA	NA	NA	NA	NA	NA	NA	NA
TIME	18:58	19:21	NA	NA	NA	NA	NA	NA	NA	NA
INJECTION VOLUME (μl)	500	500	NA	NA	NA	NA	NA	NA	NA	NA
PURGE VOLUME (ml)	100	200	NA	NA	NA	NA	NA	NA	NA	NA
VACUUM (in. Hg)	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
DILUTION FACTOR	1	1	NA	NA	NA	NA	NA	NA	NA	NA
COMMENTS										

TOTAL VOLATILE PETROLEUM HYDROCARBONS QUANTITATED AS KEROSENE (μg/L)

Total Volatile Petroleum Hydrocarbons	ARF 1.22E+04	6.20E+01 ND<50	1.80E+01 ND<50	0.00E+00 NA	0.00E+00 NA	0.00E+00 NA	0.00E+00 NA	0.00E+00 NA	0.00E+00 NA	0.00E+00 NA	0.00E+00 NA
--	-----------------	-------------------	-------------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------

μl = microliter
ml = milliliter
in. Hg. = inches of mercury

ND = Not Detected; constituent is below the reportable limit of quantitation for this sample.
μg/L = Micrograms per Liter

ARF = Average Response Factor
NA = Not Analyzed

10/9/97

Analyst: David M. Pride

Reviewed by: Patrick Lao

p.v.

TABLE C-2

QUALITY CONTROL DATA REPORT DIVERSEY CORPORATION, SANTA FE SPRINGS, CALIFORNIA SOIL GAS ANALYSES

FID #1 DATE 10/9/97
FILE: 1519AFQAQC

TOTAL VOLATILE PETROLEUM HYDROCARBONS QUANTITATED AS KEROSENE

SAMPLE	ARF	QC CHECK SAMPLE	RPD	BLANK	QC CHECK SAMPLE	%REC	QC CHECK SAMPLE	RPD
DATE		10/9/97		10/9/97	10/9/97		NA	
TIME				9:59	19:47		NA	
INJECTION VOLUME (μ l)		200		500	50		NA	
ACTUAL CONCENTRATION (μ g/L)		6164			6164		NA	
Total Volatile Petroleum Hydrocarbons	1.22E+04	0.00E+00 ND	NA	0.00E+00 ND	3.24E+03 5315	-14	0.00E+00 ND	NA

RT = Retention Time of Compound
ARF = Average Response Factor
RPD = relative percent deviation

μ l = microliter
 μ g/L = micrograms per liter
%REC = percent recovery

ND = Not Detected; constituent is below the detection limit for this sample.
NA = QC Check sample was not analyzed for this compound.

10/9/97

Analyst: David M. Pride

Reviewed by: Patrick Lao

0.6

TABLE C-3

TOTAL VOLATILE PETROLEUM HYDROCARBONS QUANTITATED AS KEROSENE
 RESPONSE FACTORS FOR MULTI-POINT CALIBRATION
 DIVERSEY CORPORATION, SANTA FE SPRINGS, CALIFORNIA
 OCTOBER 9, 1997

STANDARD CONC. ($\mu\text{g/L}$)		6164	6164	6164	AVERAGE		RELATIVE
INJECTION VOLUME(μL)		100	200	400	RESPONSE	STANDARD	PERCENT
COMPOUND WEIGHT(μg)	RT	0.616	1.233	2.466	FACTOR	DEVIATION	DEVIATION
Total Volatile Hydrocarbons	N/A	7618	16294	27259			
CF		1.24E+04	1.32E+04	1.11E+04	1.22E+04	1.09E+03	9

$\mu\text{g/L}$ = micrograms per liter
 μl = microliter
 μg = microgram
 RT = retention time
 CF = calibration factor

10/9/97

Analyst: David M. Pride

Reviewed by: Patrick Lao

P.L.

TABLE G-4
ENVIRONMENTAL SUPPORT TECHNOLOGIES, INC.
REPORTABLE LIMITS FOR SOIL GAS SURVEYS

The Reportable Limit of Quantitation for Total Volatile Hydrocarbons
is 50 µg/L when the sample injection volume is 500 µL.
Reportable limits for lesser injections volumes are listed below.

Injection Volume (µL)	Reportable Limit (µg/L)
500	50
250	100
200	125
100	250
50	500
10	2500

Appendix C- Groundwater Sampling Logs

Environmental Strategies Corporation

Water Sampling Form

Sample Desig. 10-2 Job / task # 213430 Sampled By DP
 Sample Type MW Site Name Former Diversy Corp Date 10-9-97
(monitoring well, treatment syst., etc.)
 Sample Method Boiler
 Field Conditions Clear, warm 80°F

Water Level Information

Measuring Point TOC Instrument Used Solinst W.L. for 80% recovery _____
(mp, TOC, north point TOC, etc.)
 W.L. Before Purge 35.5 W.L. After purge _____ W.L. Time of Sample _____
 Time 7:50 Time _____ Date _____ Time _____

Purge Start

Purge Information

Purge Device

Well Depth 76.65 Screened Interval _____
 Well Dia. 2" Purge Calculation (76.45-35.5) x 1.9 = 20.5 Actual Amt. Removed 22 gal
(well depth-depth to water) X # of casing Vol. = Purge Vol.

Purge Volume Multipliers

Casing Dia.	1 Casing Vol.	3 Casing Vol.	5 Casing Vol.
1.0	0.04	0.12	0.20
2.0	0.16	0.49	0.82
3.0	0.37	1.10	1.84
3.5	0.50	1.50	2.50
4.0	0.65	1.96	3.26
4.5	0.83	2.48	4.13
6.0	1.47	4.41	7.34
8.0	2.61	7.83	13.06
10.0	4.08	12.24	20.40

QA/QC Information

X if Present	Sample Designation
Trip blank	_____
Duplicate	_____
Field blank	_____
Q.C. Spike	_____
Other	_____

Parameter Readings/Notes

Time	Amt. rem'd	Temp.	Cond.	pH	Turb.	Observations/Notes
0850	81	66.9	3650	7.4		No Product
0900	9	68.9	1650	7.24		
0908	15	69.0	1666	7.29		
0915	21	69.5	1650	7.15		

Sample Time 0930 Sample / Lab Information _____ Sampling Device Disposable Bottle

Laboratory name and Location : _____

Analysis	Container(s)	No.	Volume	Preservative	Filtration
VOC 8260	40ml	3	40ml	HCL	NO
TPH Kerosene 8015 mod		1	1L		
PH 4251	4040				
MBAS	425.1				
total phosphates	365				
chlorides	9250				

Decon. Information

Purge Device(s) / Equipment _____

(briefly describe)

Sampling Device(s) / Equipment _____

Environmental Strategies Corporation

Water Sampling Form

Sample Desig. W-3 Job / task # 213430 Sampled By _____
 Sample Type MW Site Name Former Diversy Corp Date _____
(monitoring well, treatment syst., etc.)
 Sample Method Bailer
 Field Conditions Clear Warm 75°F

Water Level Information

Measuring Point TOC Instrument Used Solinst W.L. for 80% recovery _____
(mp, TOC, north point TOC, etc.)
 W.L. Before Purge 35.21 W.L. After purge _____ W.L. Time of Sample _____
 Time 1200 Time _____ Date _____ Time _____

Purge Start _____ Purge Information _____ Purge Device _____
 Well Depth 72.17 Screened Interval _____
 Well Dia. 6" Purge Calculation 72.17 - 53.47 = 18.7 Actual Amt. Removed 20 gals
(well depth - depth to water) X # of casing Vol. = Purge Vol.

Purge Volume Multipliers

Casing Dia.	1 Casing Vol.	3 Casing Vol.	5 Casing Vol.
1.0	0.04	0.12	0.20
2.0	0.16	0.49	0.82
3.0	0.37	1.10	1.84
3.5	0.50	1.50	2.50
4.0	0.65	1.96	3.26
4.5	0.83	2.48	4.13
6.0	1.47	4.41	7.34
8.0	2.61	7.83	13.06
10.0	4.08	12.24	20.40

QA/QC Information

X if Present	Sample Designation
Trip blank	_____
Duplicate	_____
Field blank	_____
Q.C. Spike	_____
Other	_____

Parameter Readings/Notes

Time	Amt. rem'd	Temp.	Cond.	pH	Turb.	Observations/Notes
9:20	1.5	73.5	1.80	6.75	OFF SCALE	CLO404 No Product
9:25	4.0	72.1	1.75	6.77	11	11
9:30	7.0	72.0	1.77	6.73	11	11
9:35	9.0	72.1	1.74	6.78	11	11
9:40	11.0	72.0	1.75	6.77	11	11
9:50	14.0	72.0	1.77	6.79	11	11
10:05	18.0	73.2	1.84	6.69	11	11

Sample Time _____ Sample / Lab Information _____ Sampling Device Disposable Bailer

Laboratory name and Location : _____

Analysis	Container(s)	No.	Volume	Preservative	Filtration
VOC 8260	40 ml	3	40 ml	HCL	NO
TPH Kerosene 8015 mcl		1	1L		
pH 425.1	4040				
MBAS	425.1				
total phosphates	365				
chlorides	9250				

Decon. Information

Purge Device(s) / Equipment _____

(briefly describe)

Sampling Device(s) / Equipment _____

Environmental Strategies Corporation

Water Sampling Form

Sample Desig. MW-4 Job / task # 213430 Sampled By DB/PM
 Sample Type MW Site Name Former Diversy Corp Date 10-4-97
 (monitoring well, treatment plant, etc.)
 Sample Method Hand
 Field Conditions Clear, Warm 75°F

Water Level Information

Measuring Point TOC Instrument Used Solinst W.L. for 80% recovery _____
 (mp, TOC, north point TOC, etc.)
 W.L. Before Purge 35.95 W.L. After purge _____ W.L. Time of Sample _____
 Time _____ Time _____ Date _____ Time _____

Purge Start _____ Purge Information _____ Purge Device _____
 Well Depth 65.31 Screened Interval _____
 Well Dia. 4 Purge Calculation (65.31 - 35.95) 1.96 = 57.5 Actual Amt. Removed .60 gals
 (well depth - depth to water) X # of casing Vol. = Purge Vol.

Purge Volume Multipliers

Casing Dia.	1 Casing Vol.	3 Casing Vol.	5 Casing Vol.
1.0	0.04	0.12	0.20
2.0	0.16	0.49	0.82
3.0	0.37	1.10	1.84
3.5	0.50	1.50	2.50
4.0	0.65	1.96	3.26
4.5	0.83	2.48	4.13
6.0	1.47	4.41	7.34
8.0	2.61	7.83	13.06
10.0	4.08	12.24	20.40

QA/QC Information

X if Present	Sample Designation
Trip blank	
Duplicate	X 200
Field blank	
Q.C. Spike	
Other	

Parameter Readings/Notes

Time	Amt. rem'd	Temp.	Cond.	pH	Turb.	Observations/Notes
11:50	1.5	76.5	1.90	6.64		Cloudy No Product
11:53	8.0	74.5	1.81	6.49		11
12:03	12.0	73.1	1.92	6.47		11
12:10	20.0	72.3	2.02	6.30		11
12:30	40.0	72.3	1.98	6.27		11
12:45	45.0	72.5	2.03	6.30		11
12:50	50.0	72.9	2.01	6.31		11

Sample Time 1300 Sample / Lab Information _____ Sampling Device Disposable bottle

Laboratory name and Location: Collect Duplicate (200)

Analysis	Container(s)	No.	Volume	Preservative	Filtration
VOC R260	40ml	3	40ml	HCL	NO
TPH Kerosene 8015 mol		1	1L		
pH 42511	9040				
MVAS	425.11				
old phosphates	365				
chlorides	9250				

Decon. Information

Purge Device(s) / Equipment _____ (briefly describe) _____ Sampling Device(s) / Equipment _____

Environmental Strategies Corporation

Water Sampling Form

Sample Desig. EW-1 Job / task # 213430 Sampled By ED/PA
 Sample Type MW/EW Site Name Former Diversy Corp Date 10-9-97
(monitoring well, treatment syst., etc.)
 Sample Method Filter
 Field Conditions Clear Warm 75°F

Water Level Information

Measuring Point TOC Instrument Used Solinst W.L. for 80% recovery _____
(imp. TOC, oorth point TOC, etc.)
 W.L. Before Purge 35.5 W.L. After purge _____ W.L. Time of Sample _____
 Time _____ Time _____ Date _____ Time _____

Purge Information

Purge Start _____ Purge Device Filter
 Well Depth _____ Screened Interval 10-115
 Well Dia. _____ Purge Calculation 1000 (35.5 - 10) = 2550 Actual Amt. Removed 3 gal
(well depth - depth to water) X 8 of casing Vol. = Purge Vol.

Purge Volume Multipliers

Casing Dia.	1 Casing Vol.	3 Casing Vol.	5 Casing Vol.
1.0	0.04	0.12	0.20
2.0	0.16	0.49	0.82
3.0	0.37	1.10	1.84
3.5	0.50	1.50	2.50
4.0	0.65	1.96	3.26
4.5	0.83	2.48	4.13
6.0	1.47	4.41	7.34
8.0	2.61	7.83	13.06
10.0	4.08	12.24	20.40

QA/QC Information

X if Present	Sample Designation
Trip blank	_____
Duplicate	_____
Field blank	_____
Q.C. Spike	_____
Other	_____

Parameter Readings/Notes

Time	Amt. remv'd	Temp.	Cond.	pH	Turb.	Observations/Notes
1154	15	75.5	1720	6.92		No Product
1159	1	74.0	1640	6.93		

Sample / Lab Information

Sample Time _____ Sampling Device Disposable Filter
 Laboratory name and Location : _____

Analysis	Container(s)	No.	Volume	Preservative	Filtration
VOC 8260	40 ml	3	40 ml	HCL	NO
PH/Hexane 8015 mol		1	1L		
PH 425.1	4040				
MARS	425.1				
phosphates	365				
phosphates	9250				

Decon. Information

Purge Device(s) / Equipment

(briefly describe)

Sampling Device(s) / Equipment

Environmental Strategies Corporation

Water Sampling Form

Sample Desig. EW-2 Job / task # 213430 Sampled By BB/PM
 Sample Type MW / EW Site Name Former Diversy Corp Date 10-9-97
(monitoring well, treatment syst., etc.)
 Sample Method Boiler
 Field Conditions Clear, Warm 75°F

Water Level Information

Measuring Point TOC Instrument Used Solinst W.L. for 80% recovery _____
(mp, TOC, north point TOC, etc.)
 W.L. Before Purge 3.12 W.L. After purge _____ W.L. Time of Sample _____
 Time 1:25 Time _____ Date _____ Time _____

Purge Information

Purge Start _____ Purge Device _____
 Well Depth 45 Screened Interval _____
 Well Dia. 4" Purge Calculation 45 - 31.2 = 13.8 13.8 x 3.14 = 135.8 135.8 x 3.14 = 426.5
(well depth - depth to water) X π of casing Vol. = Purge Vol. Actual Amt. Removed 3.14

Purge Volume Multipliers

Casing Dia.	1 Casing Vol.	3 Casing Vol.	5 Casing Vol.
1.0	0.04	0.12	0.20
2.0	0.16	0.49	0.82
3.0	0.37	1.10	1.84
3.5	0.50	1.50	2.50
4.0	0.65	1.96	3.26
4.5	0.83	2.48	4.13
6.0	1.47	4.41	7.34
8.0	2.61	7.83	13.06
10.0	4.08	12.24	20.40

QA/QC Information

X if Present	Sample Designation
Trip blank	<u>No Product</u>
Duplicate	
Field blank	
Q.C. Spike	
Other	

Parameter Readings/Notes

Time	Amt. rem'd	Temp.	Cond.	pH	Turb.	Observations/Notes
		<u>86.7</u>	<u>225</u>	<u>6.58</u>		
<u>11:20</u>	<u>1</u>	<u>77.2</u>	<u>2370</u>	<u>6.52</u>		
<u>11:25</u>	<u>2</u>	<u>75.4</u>	<u>2400</u>	<u>6.77</u>		<u>1.5% Sample to 20%</u> <u>< 1% of total</u>

Sample Time _____ Sample / Lab Information _____ Sampling Device Disposable Boiler

Laboratory name and Location :

Analysis	Container(s)	No.	Volume	Preservative	Filtration
<u>VOC 8260</u>	<u>40 ml</u>	<u>3</u>	<u>40 ml</u>	<u>HCL</u>	<u>NO</u>
<u>TPH Kerosene 8015 mod</u>		<u>1</u>	<u>1L</u>		
<u>pH 425.1</u>	<u>4040</u>				
<u>MBAS</u>	<u>425.1</u>				
<u>total phosphates</u>	<u>365</u>				
<u>chlorides</u>	<u>9250</u>				

Decon. Information

Purge Device(s) / Equipment

(briefly describe)

Sampling Device(s) / Equipment

Environmental Strategies Corporation

Water Sampling Form

Sample Desig. EW-3 Job / task # 213430 Sampled By _____

Sample Type MW/EW Site Name Former Diversy Corp Date _____
(monitoring well, treatment syst., etc.)

Sample Method Bailer

Field Conditions Clear Water 75°F

Water Level Information

Measuring Point TOC Instrument Used Solinst W.L. for 80% recovery _____
(imp. TOC, north point TOC, etc.)

W.L. Before Purge 35.66 W.L. After purge _____ W.L. Time of Sample _____
 Time _____ Time _____ Date _____ Time _____

Purge Start 1030 Purge Information Purge Device _____

Well Depth 45.20 Screened Interval _____

Well Dia. 4" Purge Calculation $(45.20 - 35.66) \times 1.96 = 19.00$ Actual Amt. Removed 20 gal
(well depth - depth to water) X # of casing Vol. = Purge Vol.

Purge Volume Multipliers

Casing Dia.	1 Casing Vol.	3 Casing Vol.	5 Casing Vol.
1.0	0.04	0.12	0.20
2.0	0.16	0.49	0.82
3.0	0.37	1.10	1.84
3.5	0.50	1.50	2.50
4.0	0.65	1.96	3.26
4.5	0.83	2.48	4.13
6.0	1.47	4.41	7.34
8.0	2.61	7.83	13.06
10.0	4.08	12.24	20.40

QA/QC Information

X if Present	Sample Designation
Trip blank	_____
Duplicate	_____
Field blank	_____
Q.C. Spike	_____
Other	_____

Parameter Readings/Notes

Time	Amt. rem'd	Temp.	Cond.	pH	Turb.	Observations/Notes
1037	9	76.5	3880	6.67		NO PRODUCT
1039	13	79.9	4010	6.99		
1045	15	82.2	4030	7.12		WELL LOGS SHOW 3' AT BOTTOM WILL WAIT ~ 2 HRS BEFORE SAMPLING

Sample Time 1330 Sample / Lab Information Sampling Device BAILER
Disposal

Laboratory name and Location : _____

Analysis	Container(s)	No.	Volume	Preservative	Filtration
VOC 8260	40 ml	3	40 ml	HCL	NO
TPH/Kerosene 8015 mod		1	1L		
pH 4251	4040				
MBAS	4251				
total phosphates	365				
chlorides	9250				

Decon. Information

Purge Device(s) / Equipment

(briefly describe)

Sampling Device(s) / Equipment

Environmental Strategies Corporation

Water Sampling Form

Sample Desig. FW-4 Job / task # 213430 Sampled By BB/PM
 Sample Type _____ Site Name Former Diversy Corp Date 10-9-97
(monitoring well, treatment syst., etc.)
 Sample Method _____
 Field Conditions _____

Water Level Information

Measuring Point TOC Instrument Used Solinst W.L. for 80% recovery _____
(mp, TOC, north point TOC, etc.)
 W.L. Before Purge D17 W.L. After purge _____ W.L. Time of Sample _____
 Time 1127 Time _____ Date _____ Time _____

Purge Start _____ Purge Information _____ Purge Device _____
 Well Depth / Screened Interval _____
 Well Dia. / Purge Calculation _____ Actual Amt. Removed _____
(well depth - depth to water) X # of casing Vol. = Purge Vol.

Purge Volume Multipliers

Casing Dia.	1 Casing Vol.	3 Casing Vol.	5 Casing Vol.
1.0	0.04	0.12	0.20
2.0	0.16	0.49	0.82
3.0	0.37	1.10	1.84
3.5	0.50	1.50	2.50
4.0	0.63	1.96	3.26
4.5	0.83	2.48	4.13
6.0	1.47	4.41	7.34
8.0	2.61	7.83	13.06
10.0	4.08	12.24	20.40

QA/QC Information

X if Present	Sample Designation
Trip blank	_____
Duplicate	_____
Field blank	_____
Q.C. Spike	_____
Other	_____

Parameter Readings/Notes

Time	Amt. rem'd	Temp.	Cond.	pH	Turb.	Observations/Notes

Sample Time _____ Sample / Lab Information _____ Sampling Device _____

Laboratory name and Location : _____

Analysis	Container(s)	No.	Volume	Preservative	Filtration
VOC 8260	40 ml	3	40 ml	HCL	NO
TPH Kerosene 8015 mol		1	1L		
pH 725.1	4040				
MBAS	425.1				
total phosphates	365				
chloride	9250				

Decon. Information

Purge Device(s) / Equipment _____

(briefly describe)

Sampling Device(s) / Equipment _____


Appendix D - Chains-of-Custody

No. 015419

CHAIN OF CUSTODY RECORD

Page 1 of 2

PROJECT NO. 213430-3		PROJECT NAME AND LOCATION: DUESBY Santa Fe Springs, CA			NO. OF CONTAINERS	REMARKS							
SAMPLERS: (Signature) <i>[Signature]</i>		PRINT NAME: Robert E. Mankin Bob Beilhouse											
SAMPLE I.D.	SAMPLE LOCATION	DATE	TIME	MATRIX									
MW-2		9/97	0130	W	7	X	X	X	X	X	X	X	will call
MW-3		9/97	1015	W	7	X	X	X	X	X	X	X	For TAT.
MW-4		9/97	1300	W	7	X	X	X	X	X	X	X	
EW-3		9/97	1530	W	7	X	X	X	X	X	X	X	
200		9/97	—	W	7	X	X	X	X	X	X	X	for results
EW-1		9/97	1400	W	7	X	X	X	X	X	X	X	to Bob R.
EW-2		9/97	1410	W	7	X	X	X	X	X	X	X	(408) 453-0496
SB1-5'		10/10/97	0850	Soil	1	X	X						
SB1-10'		10/10/97	0900		1	X	X						archive SB1-10'
SB1-15'		10/10/97	0915		1	X	X						
SB1-20'		10/10/97	0950		1	X	X						
SB2-5'		10/10/97	1015		1	X	X						
SB2-10'		10/10/97	1630		1	X	X						

Relinquished by: (Signature) <i>Bob Beilhouse</i>	Date/Time 10/10/97	Received by: (Signature) <i>[Signature]</i>	LAB NAME: Centrum	ENVIRONMENTAL STRATEGIES CORPORATION 11911 Freedom Drive Reston, Virginia 20190 (703) 709-6500 • Fax (703) 318-3995 Fax (412) 787-8065 
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	CITY: Redlands	
			COURIER: L.B.	
			AIRBILL NO.	
Received for Laboratory by: (Signature)	PRINT NAME:	Date/Time	CUSTODY SEAL NOS:	
			COOLER NO:	

ATTENTION LAB: SEND ANALYTICAL RESULTS TO THE FOLLOWING ESC STAFF MEMBER: *Bob Beilhouse*

CA ☒ MA ☐ PA ☐ MN ☐

DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT: COPY TO ESC FILES

No. 108555

CHAIN OF CUSTODY RECORD

Page _____ of _____

[illegible]

CA 1 MA PA MN

DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT: COPY TO ESC FILES

Appendix E - Laboratory Analytical Results



Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: Environmental Strategies
101 Metro Dr., Ste. 650
San Jose, CA 95110

Date Sampled: 10/09-10/97
Date Received: 10/10/97
Job Number: 12240

Project: Diversey SFS

CASE NARRATIVE

The following information applies to samples which were received on 10/10/97 :

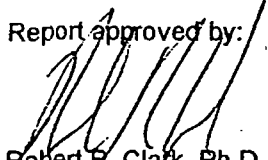
The samples were received at the laboratory chilled and sample containers were intact.

The Chloride, Phosphate, and Surfactant analyses were subcontracted to ELAP Lab #1230.
The original report is attached to, but is not part of, this report.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

8260: The sample was run at a dilution due to high levels of hydrocarbons in the sample; consequently, detection limits were raised.

Report approved by:


Robert R. Clark, Ph.D.
Laboratory Director

ELAP # 1184

DL : Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.

ND : Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.


NA : Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.

No. 015419

CHAIN OF CUSTODY RECORD

Page 1 of 2

PROJECT NO. 213430-3		PROJECT NAME AND LOCATION: DIVERSY Santa Fe Springs CA			NO. OF CONTAINERS											REMARKS		
SAMPLERS: (Signature) <i>[Signature]</i>		PRINT NAME: PETER E. MORRIS Bob Beckow																
SAMPLE I.D.	SAMPLE LOCATION	DATE	TIME	MATRIX		VOCS	SVOCs	TPH as hexachlorine	PCB's	SURFACTANTS	425.1	PH	9040	TEMP. PROPERTIES	305	CHLORIDES	9250	
1 MW-2		10/9/97	0730	W	7	X	X	X	X	X	X	X	X	X	X	X	X	Will call
2 MW-3		10/9/97	1015	W	7	X	X	X	X	X	X	X	X	X	X	X	X	For TAT.
3 MW-4		10/9/97	1300	W	7	X	X	X	X	X	X	X	X	X	X	X	X	
4 EW-3		10/9/97	1330	W	7	X	X	X	X	X	X	X	X	X	X	X	X	
5 200		10/9/97	—	W	7	X	X	X	X	X	X	X	X	X	X	X	X	fax results
6 EW-1		10/9/97	1400	W	7	X	X	X	X	X	X	X	X	X	X	X	X	to Bob R.
7 EW-2		10/9/97	1410	W	7	X	X	X	X	X	X	X	X	X	X	X	X	(408) 453-0496
8 SB1-5'		10/10/97	0850	Soil	1	X	X											
9 SB1-10'		10/10/97	0900		1	X	X											archive SB1-10'
10 SB1-15'		10/10/97	0915		1	X	X											
11 SB1-20'		10/10/97	0950		1	X	X											
12 SB2-5'		10/10/97	1015		1	X	X											
13 SB2-10'		10/10/97	1030		1	X	X											

Relinquished by: (Signature) <i>Bob Beckow</i>	Date/Time 10/10/97 12:10	Received by: (Signature) <i>[Signature]</i>	LAB NAME: Centrum	ENVIRONMENTAL STRATEGIES CORPORATION 11911 Freedom Drive Reston, Virginia 20190 (703) 709-6500 • Fax (703) 318-3995 Fax (412) 787-8065 Chilled Unsealed 
Relinquished by: (Signature) <i>[Signature]</i>	Date/Time 10/10/97 2:31	Received by: (Signature) <i>[Signature]</i>	CITY: Redlands	
			COURIER: Lab	
			AIRBILL NO.	
Received for Laboratory by: (Signature) <i>[Signature]</i>	PRINT NAME: JERRY SMITH	Date/Time 11/10 2:37	CUSTODY SEAL NOS:	E-2 VOA-3
			COOLER NO:	

ATTENTION LAB: SEND ANALYTICAL RESULTS TO THE FOLLOWING ESC STAFF MEMBER: Bob Beckow

CA ☒ MA ☐ PA ☐ MN ☐

DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT; COPY TO ESC FILES

QC Sample Report - General Chemistry

Matrix: Water
Batch #: 9040W0180
Sample ID: EW-2

Duplicates:

Analysis	Sample Results	Sample Duplicate Results	Relative % Difference	Upper Control Limit RPD	Pass / Fail
pH	6.993	7.039	1%	20%	Pass

Analytical Notes:

QC Sample Report - EPA 8015M Diesel

Matrix: Water
 Batch #: 8015DW1184

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Diesel	0.8	81	70 - 130	Pass

Analytical Notes:

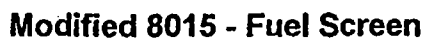
Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Diesel	0.65	0.63	3%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample
 MSD: Matrix Spike Duplicate



Date Sampled: 10/09-10/97
Date Received: 10/10/97
Date Extracted: 10/13/97
Date Analyzed: 10/13-14/97
Batch Number: 8015DS1183

[illegible]

QC Sample Report - EPA 8015M Diesel

Matrix: Soil
Batch #: 8015DS1183

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Diesel	100	82	70 - 130	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Diesel	82	82	0%	29%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

EPA 8260 - Volatile Organics

Client: Environmental Strategies
 Project: Diversey SFS
 Job No.: 12240
 Matrix: Soil
 Analyst: TPW

Date Sampled: 10/09-10/97
 Date Received: 10/10/97
 Date Analyzed: 10/13-15/97
 Batch Number: 8260S1077

Compounds	Sample ID: DL	Blank mg/Kg	SB1-5' mg/Kg	SB1-10' mg/Kg	SB1-20' mg/Kg	SB2-5' mg/Kg	SB2-10' mg/Kg
Benzene	0.001	ND	ND	ND	ND	ND	ND
Bromobenzene	0.005	ND	ND	ND	ND	ND	ND
Bromochloromethane	0.005	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.001	ND	ND	ND	ND	ND	ND
Bromoform	0.005	ND	ND	ND	ND	ND	ND
Bromomethane	0.005	ND	ND	ND	ND	ND	ND
2-Butanone	0.005	ND	ND	ND	ND	ND	ND
n-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.002	ND	ND	0.002	ND	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	0.001	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.001	ND	ND	ND	ND	ND	ND
Chloroethane	0.005	ND	ND	ND	ND	ND	ND
Chloroform	0.002	ND	ND	ND	ND	ND	ND
Chloromethane	0.001	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	0.002	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.002	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND	ND	ND
Dibromomethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.001	ND	ND	ND	ND	ND	0.002
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.002	ND	ND	ND	ND	0.014	0.003
trans-1,2-Dichloroethene	0.002	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.001	ND	ND	ND	ND	0.018	0.008
1,3-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	0.001	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND	ND	ND

EPA 8260 - Volatile Organics

Client: Environmental Strategies
 Project: Diversey SFS
 Job No.: 12240
 Matrix: Soil
 Analyst: TPW

Date Sampled: 10/09-10/97
 Date Received: 10/10/97
 Date Analyzed: 10/13-15/97
 Batch Number: 8260S1077

Compounds	Sample ID: DL	Blank mg/Kg	SB1-5' mg/Kg	SB1-10' mg/Kg	SB1-20' mg/Kg	SB2-5' mg/Kg	SB2-10' mg/Kg
Ethylbenzene	0.001	ND	ND	ND	ND	0.006	ND
Hexachlorobutadiene	0.001	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0.001	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	0.002	ND	ND	ND	ND	ND	ND
Methylene chloride	0.01	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	0.005	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether	0.005	ND	ND	ND	ND	ND	ND
Napthalene	0.002	ND	ND	ND	ND	ND	ND
n-Propylbenzene	0.001	ND	ND	ND	ND	ND	ND
Styrene	0.001	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.002	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.001	ND	ND	ND	ND	0.002	ND
Toluene	0.001	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.001	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.003	ND	ND	ND	ND	ND	ND
Trichloroethene	0.001	ND	ND	ND	ND	0.009	0.006
1,2,3-Trichloropropane	0.003	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0.001	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001	ND	ND	0.002	0.002	0.001	ND
1,3,5-Trimethylbenzene	0.001	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.002	ND	ND	ND	ND	ND	ND
Xylenes (total)	0.003	ND	ND	ND	ND	0.036	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	SB1-5'	SB1-10'	SB1-20'	SB2-5'	SB2-10'
Dibromofluoromethane	108	105	103	110	113	110
Toluene-d8	102	101	97	96	95	99
Bromofluorobenzene	98	95	89	91	94	101

EPA 8260 - Volatile Organics

Client: Environmental Strategies
Project: Diversey SFS
Job No.: 12240
Matrix: Soil
Analyst: TPW

Date Sampled: 10/09-10/97
Date Received: 10/10/97
Date Analyzed: 10/13-15/97
Batch Number: 8260S1077

Compounds	Sample ID: DL	SB2-15' mg/Kg	SB3-5' mg/Kg	SB3-10' mg/Kg	SB3-15' mg/Kg
Benzene	0.001	ND	ND	ND	ND
Bromobenzene	0.005	ND	ND	ND	ND
Bromochloromethane	0.005	ND	ND	ND	ND
Bromodichloromethane	0.001	ND	ND	ND	ND
Bromoform	0.005	ND	ND	ND	ND
Bromomethane	0.005	ND	ND	ND	ND
2-Butanone	0.005	ND	ND	ND	ND
n-Butylbenzene	0.002	ND	ND	ND	ND
sec-Butylbenzene	0.002	ND	ND	ND	ND
tert-Butylbenzene	0.002	ND	ND	ND	ND
Carbon tetrachloride	0.001	ND	ND	ND	ND
Chlorobenzene	0.001	ND	ND	ND	ND
Chloroethane	0.005	ND	ND	ND	ND
Chloroform	0.002	ND	ND	ND	ND
Chloromethane	0.001	ND	ND	ND	ND
2-Chlorotoluene	0.002	ND	ND	ND	ND
4-Chlorotoluene	0.002	ND	ND	ND	ND
Dibromochloromethane	0.002	ND	ND	ND	ND
1,2-Dibromoethane	0.002	ND	ND	ND	ND
Dibromomethane	0.001	ND	ND	ND	ND
1,2-Dichlorobenzene	0.001	0.002	ND	ND	ND
1,3-Dichlorobenzene	0.002	ND	ND	ND	ND
1,4-Dichlorobenzene	0.002	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND
1,1-Dichloroethane	0.001	ND	ND	ND	ND
1,2-Dichloroethane	0.001	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.002	0.045	ND	ND	ND
trans-1,2-Dichloroethene	0.002	ND	ND	ND	ND
1,2-Dichloropropane	0.001	0.078	ND	ND	ND
1,3-Dichloropropane	0.001	ND	ND	ND	ND
2,2-Dichloropropane	0.001	ND	ND	ND	ND
1,1-Dichloropropene	0.001	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.001	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.001	ND	ND	ND	ND

EPA 8260 - Volatile Organics

Client: Environmental Strategies
 Project: Diversey SFS
 Job No.: 12240
 Matrix: Soil
 Analyst: TPW

Date Sampled: 10/09-10/97
 Date Received: 10/10/97
 Date Analyzed: 10/13-15/97
 Batch Number: 8260S1077

Compounds	Sample ID:	DL	SB2-15'	SB3-5'	SB3-10'	SB3-15'
			mg/Kg	mg/Kg	mg/Kg	mg/Kg
Ethylbenzene	0.001		ND	ND	ND	ND
Hexachlorobutadiene	0.001		ND	ND	ND	ND
Isopropylbenzene	0.001		ND	ND	ND	ND
p-Isopropyltoluene	0.002		ND	ND	ND	ND
Methylene chloride	0.01		ND	ND	ND	ND
4-Methyl-2-pentanone	0.005		ND	ND	ND	ND
Methyl-tert-butyl ether	0.005		ND	ND	ND	ND
Napthalene	0.002		ND	ND	ND	ND
n-Propylbenzene	0.001		ND	ND	ND	ND
Styrene	0.001		ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.001		ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.002		ND	ND	ND	ND
Tetrachloroethene	0.001		0.009	ND	ND	ND
Toluene	0.001		ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.002		ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.002		ND	ND	ND	ND
1,1,1-Trichloroethane	0.001		ND	ND	ND	ND
1,1,2-Trichloroethane	0.003		ND	ND	ND	ND
Trichloroethene	0.001		0.081	ND	ND	ND
1,2,3-Trichloropropane	0.003		ND	ND	ND	ND
Trichlorofluoromethane	0.001		ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.001		ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.001		ND	ND	ND	ND
Vinyl chloride	0.002		ND	ND	ND	ND
Xylenes (total)	0.003		ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	SB2-15'	SB3-5'	SB3-10'	SB3-15'
Dibromofluoromethane	109	110	108	109
Toluene-d8	97	101	102	102
Bromofluorobenzene	96	99	98	99

EPA 8260 - Volatile Organics

Client: Environmental Strategies
Project: Diversey SFS
Job No.: 12240
Matrix: Soil
Analyst: TPW

Date Sampled: 10/09-10/97
Date Received: 10/10/97
Date Analyzed: 10/13-15/97
Batch Number: 8260S1077

Compounds	Sample ID:	Blank	SB1-15'
	DL*	mg/Kg	mg/Kg
Benzene	0.25	ND	ND
Bromobenzene	1.25	ND	ND
Bromochloromethane	1.25	ND	ND
Bromodichloromethane	0.25	ND	ND
Bromoform	1.25	ND	ND
Bromomethane	1.25	ND	ND
2-Butanone	1.25	ND	ND
n-Butylbenzene	0.5	ND	14
sec-Butylbenzene	0.5	ND	6.7
tert-Butylbenzene	0.5	ND	ND
Carbon tetrachloride	0.25	ND	ND
Chlorobenzene	0.25	ND	ND
Chloroethane	1.25	ND	ND
Chloroform	0.5	ND	ND
Chloromethane	0.25	ND	ND
2-Chlorotoluene	0.5	ND	ND
4-Chlorotoluene	0.5	ND	ND
Dibromochloromethane	0.5	ND	ND
1,2-Dibromoethane	0.5	ND	ND
Dibromomethane	0.25	ND	ND
1,2-Dichlorobenzene	0.25	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND
Dichlorodifluoromethane	1.25	ND	ND
1,1-Dichloroethane	0.25	ND	ND
1,2-Dichloroethane	0.25	ND	ND
1,1-Dichloroethene	1.25	ND	ND
cis-1,2-Dichloroethene	0.5	ND	ND
trans-1,2-Dichloroethene	0.5	ND	ND
1,2-Dichloropropane	0.25	ND	ND
1,3-Dichloropropane	0.25	ND	ND
2,2-Dichloropropane	0.25	ND	ND
1,1-Dichloropropene	0.25	ND	ND
cis-1,3-Dichloropropene	0.25	ND	ND
trans-1,3-Dichloropropene	0.25	ND	ND

EPA 8260 - Volatile Organics

Client: Environmental Strategies
Project: Diversey SFS
Job No.: 12240
Matrix: Soil
Analyst: TPW

Date Sampled: 10/09-10/97
Date Received: 10/10/97
Date Analyzed: 10/13-15/97
Batch Number: 8260S1077

Compounds	Sample ID: DL*	Blank mg/Kg	SB1-15' mg/Kg
Ethylbenzene	0.25	ND	1.6
Hexachlorobutadiene	0.25	ND	ND
Isopropylbenzene	0.25	ND	2.6
p-Isopropyltoluene	0.5	ND	8.0
Methylene chloride	2.5	ND	ND
4-Methyl-2-pentanone	1.25	ND	ND
Methyl-tert-butyl ether	1.25	ND	ND
Napthalene	0.5	ND	4.4
n-Propylbenzene	0.25	ND	6.5
Styrene	0.25	ND	ND
1,1,1,2-Tetrachloroethane	0.25	ND	ND
1,1,2,2-Tetrachloroethane	0.5	ND	ND
Tetrachloroethene	0.25	ND	ND
Toluene	0.25	ND	ND
1,2,3-Trichlorobenzene	0.5	ND	ND
1,2,4-Trichlorobenzene	0.5	ND	ND
1,1,1-Trichloroethane	0.25	ND	ND
1,1,2-Trichloroethane	0.75	ND	ND
Trichloroethene	0.25	ND	0.55
1,2,3-Trichloropropane	0.75	ND	ND
Trichlorofluoromethane	0.25	ND	ND
1,2,4-Trimethylbenzene	0.25	ND	35
1,3,5-Trimethylbenzene	0.25	ND	17
Vinyl chloride	0.5	ND	ND
Xylenes (total)	0.75	ND	13

*See Case Narrative regarding higher than usual detection limits.

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	SB1-15'
Dibromofluoromethane	108	106
Toluene-d8	102	99
Bromofluorobenzene	98	92

QC Sample Report - EPA Method 8260

Matrix: Soil
 Batch #: 8260S1077

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	0.020	105	59 - 172	Pass
Benzene	0.020	118	66 - 142	Pass
Trichloroethene	0.020	116	71 - 137	Pass
Toluene	0.020	112	59 - 139	Pass
Chlorobenzene	0.020	103	60 - 133	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: SB3-15

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	0.0209	0.0217	4%	22%	Pass
Benzene	0.0229	0.0229	0%	21%	Pass
Trichloroethene	0.0222	0.0224	1%	24%	Pass
Toluene	0.0219	0.0219	0%	21%	Pass
Chlorobenzene	0.0206	0.0205	0%	21%	Pass

Analytical Notes:

MS: Matrix Spike Sample
 MSD: Matrix Spike Duplicate

EPA 8260 - Volatile Organics

Client: Environmental Strategies
 Project: Diversy SFS
 Job No.: 12240
 Matrix: Water
 Analyst: TPW

Date Sampled: 10/09-10/97
 Date Received: 10/10/97
 Date Analyzed: 10/16-17/97
 Batch Number: 8260W1081

Compounds	Sample ID: DL	Blank µg/L	MW-2 µg/L	MW-3 µg/L	MW-4 µg/L	EW-3 µg/L	200 µg/L
Benzene	0.5	ND	ND	0.9	ND	ND	ND
Bromobenzene	1.0	ND	ND	ND	ND	ND	ND
Bromochloromethane	1.0	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND	ND	ND	ND
Bromoform	0.5	ND	ND	ND	ND	ND	ND
Bromomethane	0.5	ND	ND	ND	ND	ND	ND
2-Butanone	5.0	ND	ND	ND	ND	ND	ND
n-Butylbenzene	0.5	ND	ND	ND	1.0	ND	1.5
sec-Butylbenzene	0.5	ND	ND	ND	0.5	ND	0.7
tert-Butylbenzene	0.5	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	0.5	ND	ND	2.0	12	ND	9.1
Chlorobenzene	0.5	ND	ND	ND	ND	ND	ND
Chloroethane	0.5	ND	ND	ND	ND	ND	ND
Chloroform	0.5	ND	1.0	6.1	11	ND	11
Chloromethane	0.5	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	0.5	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	0.5	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.5	ND	ND	ND	ND	ND	ND
Dibromomethane	0.5	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	5.6	ND	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND	1.4	ND	ND	ND
Dichlorodifluoromethane	0.5	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.5	ND	1.6	11	55	16	54
1,2-Dichloroethane	0.5	ND	ND	3.4	7.7	0.7	7.4
1,1-Dichloroethene	0.5	ND	9.2	150	270	7.3	240
cis-1,2-Dichloroethene	0.5	ND	6.1	71	6.0	51	10
trans-1,2-Dichloroethene	0.5	ND	ND	1.4	ND	0.8	ND
1,2-Dichloropropane	0.5	ND	15	380	6.3	47	10
1,3-Dichloropropane	0.5	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	0.5	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.5	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND	ND	ND	ND

EPA 8260 - Volatile Organics

Client: Environmental Strategies
 Project: Diversey SFS
 Job No.: 12240
 Matrix: Water
 Analyst: TPW

Date Sampled: 10/09-10/97
 Date Received: 10/10/97
 Date Analyzed: 10/16-17/97
 Batch Number: 8260W1081

Compounds	Sample ID: DL	Blank µg/L	MW-2 µg/L	MW-3 µg/L	MW-4 µg/L	EW-3 µg/L	200 µg/L
Ethylbenzene	0.5	ND	ND	ND	ND	ND	0.6
Hexachlorobutadiene	0.5	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0.5	ND	ND	ND	ND	ND	0.7
p-Isopropyltoluene	0.5	ND	ND	ND	2.4	ND	3.3
Methylene chloride	5.0	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	5.0	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether	0.5	ND	ND	ND	ND	ND	ND
Napthalene	0.5	ND	ND	ND	1.2	ND	2.0
n-Propylbenzene	0.5	ND	ND	ND	0.6	ND	0.9
Styrene	0.5	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1.0	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.5	ND	25	35	38	1.2	27
Toluene	0.5	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	12	30	0.8	29
1,1,2-Trichloroethane	0.5	ND	ND	ND	0.7	ND	0.7
Trichloroethene	0.5	ND	96	210	27	30	21
1,2,3-Trichloropropane	0.5	ND	ND	1.6	ND	ND	ND
Trichlorofluoromethane	0.5	ND	2.8	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.5	ND	ND	ND	2.0	ND	3.0
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	0.5	ND	0.8
Vinyl chloride	0.5	ND	ND	ND	ND	ND	ND
Xylenes (total)	1.5	ND	ND	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	MW-2	MW-3	MW-4	EW-3	200
Dibromofluoromethane	108	100	105	105	105	107
Toluene-d8	105	103	105	104	102	103
Bromofluorobenzene	98	95	99	99	99	98

EPA 8260 - Volatile Organics

Client: Environmental Strategies
 Project: Diversey SFS
 Job No.: 12240
 Matrix: Water
 Analyst: TPW

Date Sampled: 10/09-10/97
 Date Received: 10/10/97
 Date Analyzed: 10/16-17/97
 Batch Number: 8260W1081

Compounds	Sample ID:		
	DL	EW-1	EW-2
Benzene	0.5	0.6	ND
Bromobenzene	1.0	ND	ND
Bromochloromethane	1.0	ND	ND
Bromodichloromethane	0.5	ND	ND
Bromoform	0.5	ND	ND
Bromomethane	0.5	ND	ND
2-Butanone	5.0	ND	ND
n-Butylbenzene	0.5	ND	ND
sec-Butylbenzene	0.5	ND	ND
tert-Butylbenzene	0.5	ND	ND
Carbon tetrachloride	0.5	4.0	ND
Chlorobenzene	0.5	ND	ND
Chloroethane	0.5	ND	ND
Chloroform	0.5	7.7	ND
Chloromethane	0.5	ND	ND
2-Chlorotoluene	0.5	ND	ND
4-Chlorotoluene	0.5	ND	ND
Dibromochloromethane	0.5	ND	ND
1,2-Dibromoethane	0.5	ND	ND
Dibromomethane	0.5	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND
Dichlorodifluoromethane	0.5	ND	ND
1,1-Dichloroethane	0.5	20	16
1,2-Dichloroethane	0.5	4.7	ND
1,1-Dichloroethene	0.5	590	29
cis-1,2-Dichloroethene	0.5	40	46
trans-1,2-Dichloroethene	0.5	0.7	0.9
1,2-Dichloropropane	0.5	31	13
1,3-Dichloropropane	0.5	ND	ND
2,2-Dichloropropane	0.5	ND	ND
1,1-Dichloropropene	0.5	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND

EPA 8260 - Volatile Organics

Client: Environmental Strategies
 Project: Diversey SFS
 Job No.: 12240
 Matrix: Water
 Analyst: TPW

Date Sampled: 10/09-10/97
 Date Received: 10/10/97
 Date Analyzed: 10/16-17/97
 Batch Number: 8260W1081

Compounds	Sample ID:	EW-1	EW-2
	DL	µg/L	µg/L
Ethylbenzene	0.5	ND	ND
Hexachlorobutadiene	0.5	ND	ND
Isopropylbenzene	0.5	ND	ND
p-Isopropyltoluene	0.5	ND	ND
Methylene chloride	5.0	ND	ND
4-Methyl-2-pentanone	5.0	ND	ND
Methyl-tert-butyl ether	0.5	ND	ND
Napthalene	0.5	ND	ND
n-Propylbenzene	0.5	ND	ND
Styrene	0.5	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND
1,1,2,2-Tetrachloroethane	1.0	ND	ND
Tetrachloroethene	0.5	16	1.4
Toluene	0.5	ND	ND
1,2,3-Trichlorobenzene	0.5	ND	ND
1,2,4-Trichlorobenzene	0.5	ND	ND
1,1,1-Trichloroethane	0.5	64	8.1
1,1,2-Trichloroethane	0.5	ND	ND
Trichloroethene	0.5	14	2.5
1,2,3-Trichloropropane	0.5	ND	ND
Trichlorofluoromethane	0.5	ND	ND
1,2,4-Trimethylbenzene	0.5	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND
Vinyl chloride	0.5	ND	ND
Xylenes (total)	1.5	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	EW-1	EW-2
Dibromofluoromethane	107	109
Toluene-d8	100	101
Bromofluorobenzene	98	98

QC Sample Report - EPA Method 8260

Matrix: Water
Batch #: 8260W1081

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration µg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	20.0	118	59 - 172	Pass
Benzene	20.0	122	66 - 142	Pass
Trichloroethene	20.0	120	71 - 137	Pass
Toluene	20.0	117	59 - 139	Pass
Chlorobenzene	20.0	108	60 - 133	Pass

Analytical Notes:

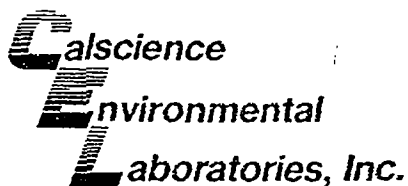
Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery µg/L	Spike Duplicate Recovery µg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	26.5	23.9	10%	22%	Pass
Benzene	24.4	24.5	0%	21%	Pass
Trichloroethene	24.1	24.1	0%	24%	Pass
Toluene	23.1	23.5	2%	21%	Pass
Chlorobenzene	21.4	21.7	1%	21%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate



October 15, 1997

Marilu Escher
Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Subject: **Calscience Work Order Number: 97-10-188**
Client Reference: **Diversy-Santa Fe Springs/12240**

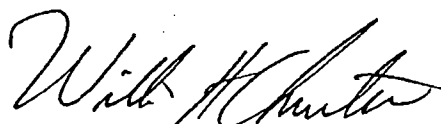
Dear Client:

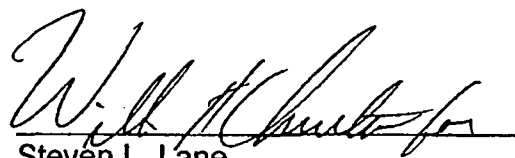
Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 10/10/97 and analyzed in accordance with the attached chain-of-custody.

The results in this analytical report are limited to the samples tested, and any reproduction of this report must be made in its entirety.

If you have any questions regarding this report, require sampling supplies or field services, or information on our analytical services, please feel free to call me at (714) 895-5494.

Sincerely,


Calscience Environmental
Laboratories, Inc.
William H. Christensen
Deliverables Manager


Steven L. Lane
Laboratory Director

ANALYTICAL REPORT

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Date Sampled: 10/09/97
Date Received: 10/10/97
Date Analyzed: 10/14/97

Attn: Marilu Escher
RE: Diversy-Santa Fe Springs/12240

Work Order No.: 97-10-188
Method: SM 4500 Cl C
Page 1 of 1

All concentrations are reported in mg/L (ppm).

<u>Sample Number</u>	<u>Chloride Concentration</u>	<u>Reportable Limit</u>
MW-2	112	2
MW-3	164	2
MW-4	124	2
EW-3	106	2
200	124	2
EW-1	134	2
EW-2	444	2
Method Blank	ND	2

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

ANALYTICAL REPORT

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Date Sampled: 10/09/97
Date Received: 10/10/97
Date Analyzed: 10/14/97

Attn: Marilu Escher
RE: Diversy-Santa Fe Springs/12240

Work Order No.: 97-10-188
Method: EPA 365.3
Page 1 of 1

All concentrations are reported in mg/L (ppm).

<u>Sample Number</u>	<u>Total Phosphorous Concentration</u>	<u>Reportable Limit</u>
MW-2	5.2	1.0
MW-3	5.0	1.0
MW-4	2.9	1.0
EW-3	3.4	1.0
200	2.5	1.0
EW-1	2.6	1.0
EW-2	0.4	0.1
Method Blank	ND	0.1

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

ANALYTICAL REPORT

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Date Sampled: 10/09/97
Date Received: 10/10/97
Date Analyzed: 10/10/97

Attn: Marilu Escher
RE: Diversy-Santa Fe Springs/12240

Work Order No.: 97-10-188
Method: EPA 425.1
Page 1 of 1

All concentrations are reported in mg/L (ppm).

<u>Sample Number</u>	<u>Surfactants (MBAS) Concentration</u>	<u>Reportable Limit</u>
MW-2	ND	0.1
MW-3	1.3	0.1
MW-4	ND	0.1
EW-3	0.1	0.1
200	0.2	0.1
EW-1	ND	0.1
EW-2	ND	0.1
Method Blank	ND	0.1

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

CHAIN OF CUSTODY RECORD

12171

Page 1 of 1

CA X

MA

PA

MN

DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT: COPY TO ESC FILES



Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: Environmental Strategies, Inc.
101 Metro Dr., Ste. 650
San Jose, CA 95110

Date Sampled: 09/25/97
Date Received: 09/25/97
Job Number: 12171

Project: Diversey SFS

CASE NARRATIVE

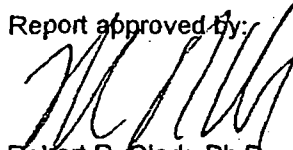
The following information applies to samples which were received on 09/25/97 :

The samples were received at the laboratory chilled and sample containers were intact.

The Ammonia, Biological Oxygen Demand, Chloride, Nitrate, Nitrite, Phenols, Sulfate, Sulfide, Total Settleable Solids, and Turbidity analyses were subcontracted to ELAP Lab #1230. The original report is attached to, but is not part of, this report.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Report approved by:


Robert R. Clark, Ph.D.
Laboratory Director

ELAP # 1184

DL : Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.

ND : Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.

NA : Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.

QC Sample Report - General Chemistry

Analysis	Sample ID:	Batch #
pH	12184-1	9040W0172
Total Dissolved Solids	12005-3	1601W0151
Total Suspended Solids	12005-5	1602W0142

Duplicates:

Analysis	Sample Results	Sample Duplicate Results	Relative % Difference	Upper Control Limit RPD	Pass / Fail
pH	8.211	8.054	2%	20%	Pass
Total Dissolved Solids	500	522	4%	20%	Pass
Total Suspended Solids	42.8	38.8	10%	20%	Pass

Analytical Notes:

QC Sample Report - Metals

Matrix: Water
Batch #: 6010W0851

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Lead	50	114	80 - 120	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: 12172-2

Compound	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Lead	1.383	1.430	3%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

QC Report - EPA 413.1 Oil & Grease Gravimetric Analysis

Matrix: Water
Batch #: 4181W0790

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration mg/Kg	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Reference Oil	260	87	70 - 130	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery mg/Kg	Spike Duplicate Recovery mg/Kg	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Reference Oil	202.00	190.00	6%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

October 06, 1997

Marilu Escher
Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Subject: **Calscience Work Order Number: 97-09-560**
Client Reference: **12171**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 09/25/97 and analyzed in accordance with the attached chain-of-custody.

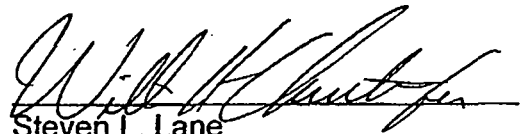
The results in this analytical report are limited to the samples tested, and any reproduction of this report must be made in its entirety.

If you have any questions regarding this report, require sampling supplies or field services, or information on our analytical services, please feel free to call me at (714) 895-5494.

Sincerely,



Calscience Environmental
Laboratories, Inc.
William H. Christensen
Deliverables Manager



Steven L. Lane
Laboratory Director

ANALYTICAL REPORT

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Date Sampled: 09/25/97
Date Received: 09/25/97
Date Analyzed: 10/02/97

Attn: Marilu Escher
RE: 12171

Work Order No.: 97-09-560
Method: EPA 420.1
Page 1 of 1

All concentrations are reported in mg/L (ppm).

<u>Sample Number</u>	<u>Total Phenolics Concentration</u>	<u>Reportable Limit</u>
1	ND	0.1
Method Blank	ND	0.1

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

ANALYTICAL REPORT

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Date Sampled: 09/25/97
Date Received: 09/25/97
Date Analyzed: 09/30/97

Attn: Marilu Escher
RE: 12171

Work Order No.: 97-09-560
Method: EPA 376.2
Page 1 of 1

All concentrations are reported in mg/L (ppm).

<u>Sample Number</u>	<u>Sulfide Concentration</u>	<u>Reportable Limit</u>
1	ND	0.1
Method Blank	ND	0.1

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

ANALYTICAL REPORT

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Date Sampled: 09/25/97
Date Received: 09/25/97
Date Analyzed: 09/26/97-10/01/97

Attn: Marilu Escher
RE: 12171

Work Order No.: 97-09-560
Method: EPA 405.1
Page 1 of 1

All concentrations are reported in mg/L (ppm).

<u>Sample Number</u>	<u>Biochemical Oxygen Demand Concentration</u>	<u>Reportable Limit</u>
1	ND	1
Method Blank	ND	1

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Date Sampled: 09/25/97
Date Received: 09/25/97
Date Analyzed: 09/30/97

Attn: Marilu Escher
RE: 12171

Work Order No.: 97-09-560
Method: EPA 350.2
Page 1 of 1

All concentrations are reported in mg/L (ppm).

<u>Sample Number</u>	<u>Ammonia-N Concentration</u>	<u>Reportable Limit</u>
1	ND	0.1
Method Blank	ND	0.1

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

ANALYTICAL REPORT

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Date Sampled: 09/25/97
Date Received: 09/25/97
Date Analyzed: 09/26/97

Attn: Marilu Escher
RE: 12171

Work Order No.: 97-09-560
Method: EPA 180.1
Page 1 of 1

All results are reported in NTU.

<u>Sample Number</u>	<u>Turbidity</u>	<u>Reportable Limit</u>
1	1.54	0.05

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Date Sampled: 09/25/97
Date Received: 09/25/97
Date Analyzed: 09/26/97

Attn: Marilu Escher
RE: 12171

Work Order No.: 97-09-560
Method: EPA 160.5
Page 1 of 1

All concentrations are reported in ml/L/hour.

<u>Sample Number</u>	<u>Settleable Solids Concentration</u>	<u>Reportable Limit</u>
1	ND	0.1

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

ANALYTICAL REPORT

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Date Sampled: 09/25/97
Date Received: 09/25/97
Date Analyzed: 09/26/97

Attn: Marilu Escher
RE: 12171

Work Order No.: 97-09-560
Method: EPA 300.0
Page of 1 of 1

All concentrations are reported in mg/L (ppm).

<u>Analyte</u>	<u>Concentration</u>	<u>Reportable Limit</u>
Sample Number: 1		
Chloride	151	100
Nitrate-N	9.4	1.0
Nitrite-N	ND	0.10
Sulfate	314	100

Sample Number: Method Blank

Chloride	ND	1.00
Nitrate-N	ND	0.10
Nitrite-N	ND	0.10
Sulfate	ND	1.00

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Exhibit G

Revised 7/20/98

**PHASE I ENVIRONMENTAL ASSESSMENT REPORT
8921 DICE ROAD
SANTA FE SPRINGS, CALIFORNIA**

Prepared for:

**Fremont Associates
970 W. 190th Street - Suite 220
Torrance, CA 90502
(310) 516-1615**

Prepared by:

**SCS Engineers
3711 Long Beach Boulevard
Ninth Floor
Long Beach, California 90807
(562) 426-9544**

RECEIVED
38 JUL 10 PM 12:53
CALIFORNIA QUALITY CONTROL BOARD
LOS ANGELES REGION

JA #694
FORMER DIVERSEY
Corp.

SCS ENGINEERS

May 29, 1998
File No. 0198030

Mr. Joseph Kesling
Principal Mutual Life Insurance Company
711 High Street
Des Moines, Iowa 50309-1350

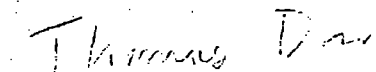
**RE: PRELIMINARY ENVIRONMENTAL ASSESSMENT
OLTMANS INVESTMENT COMPANY/FREMONT ASSOCIATES - 8921 DICE ROAD,
SANTA FE SPRINGS**

Dear Mr. Kesling:

This letter is written with respect to a proposed loan by Principal Mutual Life Insurance Company (Lender) to Oltmans Investment Company/Fremont Associates (Borrower) which is to secure a mortgage on the above-described property (the "Property"). We, the undersigned consultant, have been retained by the Lender to provide a Preliminary Environmental Assessment report (the "Report") on the Property. The undersigned further understands and acknowledges that providing the Report to the Lender in a form and substance acceptable to Lender is a condition of the closing of the subject transaction. Please be advised the Lender can rely on our environmental site assessment report titled, "Phase I Environmental Assessment Report, 8921 Dice Road, Santa Fe Springs, California," dated May 1998 subject to the limitations and qualifications contained therein. In addition, this letter acknowledges that the Report was completed incorporating the guidelines of for scope and format set forth in Lender's guidance documents and that the report satisfies such requirements set forth therein.

The undersigned further acknowledges that the Lender's successors and/or assigns may rely on this Report to the extent that Lender is able to rely on the Report including, but not limited to (name of third party — i.e., CALPERS, Nippon, Washington, New York Commons, etc.).

Sincerely,

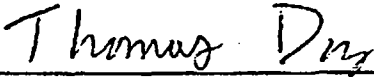


Thomas Dong, REA
Project Director
SCS ENGINEERS

This Phase I Environmental Assessment Report for 8921 Dice Road, Santa Fe Springs, California, dated May 1998 was prepared and reviewed by the following:



J. Rodney Marsh, R.E.A.
Project Manager



Thomas Dong, R.E.A.
Vice President
SCS ENGINEERS

CONTENTS

<u>Section</u>	<u>Page</u>
Disclaimer	
Introduction	1
On-site Inspection and Property Use	1
Inspection for PCB-Containing Electrical Transformers	3
Preliminary Inspection for Asbestos-Containing Building Materials	3
Summary of Previous Environmental Assessments	4
Current Regulatory Site Status	5
Historical Property Use	5
Topographic Maps	5
Aerial Photographs	5
Sanborn Maps	7
Building Department Records	7
Summary	7
Regional Geologic, Hydrogeologic, and Topographic Information	7
Regional Land Use Information	8
Regional Investigation of Hazardous Materials Sites	8
Potentially Contaminated Sites	10
Landfills	15
Oil and Gas Wells	15
Summary	16

LIST OF FIGURES, TABLES, AND APPENDICES**Page****Figures**

1 - Map Showing Location of Project Site	2
--	---

Tables

1 - List of Regulatory Contacts	9
---------------------------------------	---

Appendices

- A - Resumes of Project Personnel
- B - Sketch Map and Photographs
- C - Asbestos Investigation Report
- D - Background Information
- E - RWQCB Regulatory Status Correspondence
- F - Disposal Pond Information Documents
- G - Vista Database Report

LIMITATIONS/DISCLAIMER

This report has been prepared specifically for the Principal Financial Group with application to a Phase I Environmental Assessment for 8921 Dice Road located in Santa Fe Springs, California. The report has been prepared in accordance with the care and skill generally exercised by reputable professionals, under similar circumstances, in this or similar localities. No other warranty, expressed or implied, is made as to the professional opinions presented herein. No other party, known or unknown to SCS is intended as a beneficiary of this work product, its content or information embedded therein. Third parties use this report at their own risk. SCS assumes no responsibility for the accuracy of information obtained from, compiled or provided by third-party sources such as regulatory agency listings.

This assessment focused on potential sources of hazardous substances and petroleum hydrocarbons that could be considered a potential liability due to their presence in significant concentrations (e.g., above acceptable limits set by federal or state agencies) or due to the potential for contaminant migration through exposure pathways (e.g., ground water). Hazardous substances naturally occurring in plants, soils, and rock (e.g., trace metals, radon, or naturally-occurring asbestos) are not typically considered in these investigations.

Unless otherwise noted, sampling and laboratory analyses of soil, water, air, building materials, or other media, were not performed as part of this investigation. Positive identification of hazardous substances can only be accomplished through sampling and appropriate laboratory analysis.

Changes in site use and conditions may occur due to variations in rainfall, temperature, water usage, economic, or other factors. It is possible that additional information exists beyond the scope of this investigation. Additional information which was not available to the consultant at the time of this investigation or changes which may occur on the site or in the surrounding area may result in modification to the site that would impact the summary and recommendations presented herein. This report is not a legal opinion.

**PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT
8921 DICE ROAD
SANTA FE SPRINGS, CALIFORNIA**

INTRODUCTION

SCS Engineers (SCS) was retained to prepare a Phase I Environmental Assessment Report for the former Diversey-Wyandotte facility site located at 8921 Dice Road in Santa Fe Springs, California (Figure 1). The purpose of this investigation was to assess the potential for contamination on the site and within a one-mile radius of the subject property.

The potential for contamination was assessed through performance of a site reconnaissance survey of the property, review of historical site use information, and through contact with appropriate regulatory agencies to determine if hazardous waste contamination is present on the subject site and in the surrounding area. Soil, air, water, or building materials sampling/analysis was not conducted as part of this assessment. This assessment was completed in accordance with Principal Mutual Life Insurance Company's Guidance Document A (revised March 1997) for Phase I environmental assessments.

The site reconnaissance survey and historical and regulatory reviews were conducted in May 1998. The results of our findings are presented in the following narrative. Resumes of project personnel are provided in Appendix A.

ON-SITE INSPECTION AND PROPERTY USE

The on-site inspection of the property and surrounding area was conducted by SCS on May 11, 1998. The subject property is an approximately 5.7 acre parcel that is located on the northwest corner of Altamar Place and Dice Road in Santa Fe Springs, California.

The property is bounded on the north by railroad tracks and other industrial type activity, to the south by Altamar Place, to the east by Dice Road, and to the west by concrete tilt up buildings that appear to be used for warehousing/office.

Properties across Dice Road to the east are currently occupied by large industrial type operations (Pro Cal and T-Chem Products). Much of the property in the immediate vicinity (especially to the north, east, and south) is undeveloped former oil field property. A sketch map and photographs of the subject site are provided in Appendix B.

The subject site was originally developed in 1954 for use as an industrial facility known as Wyandotte Chemical Company (WCC). The company later became known as the Diversey Corporation (DC) and in 1996 DC restructured its operation and changed the name of the company to the Rathon Corp.

Available information indicates that WCC was involved in the manufacture of liquid cleaning compounds, insecticides, and antifreeze. Kerosene was used as the primary feedstock material for the detergent manufacturing process that operated at the subject property. Most of the processing operations were apparently located in the southern area of the western warehouse building.



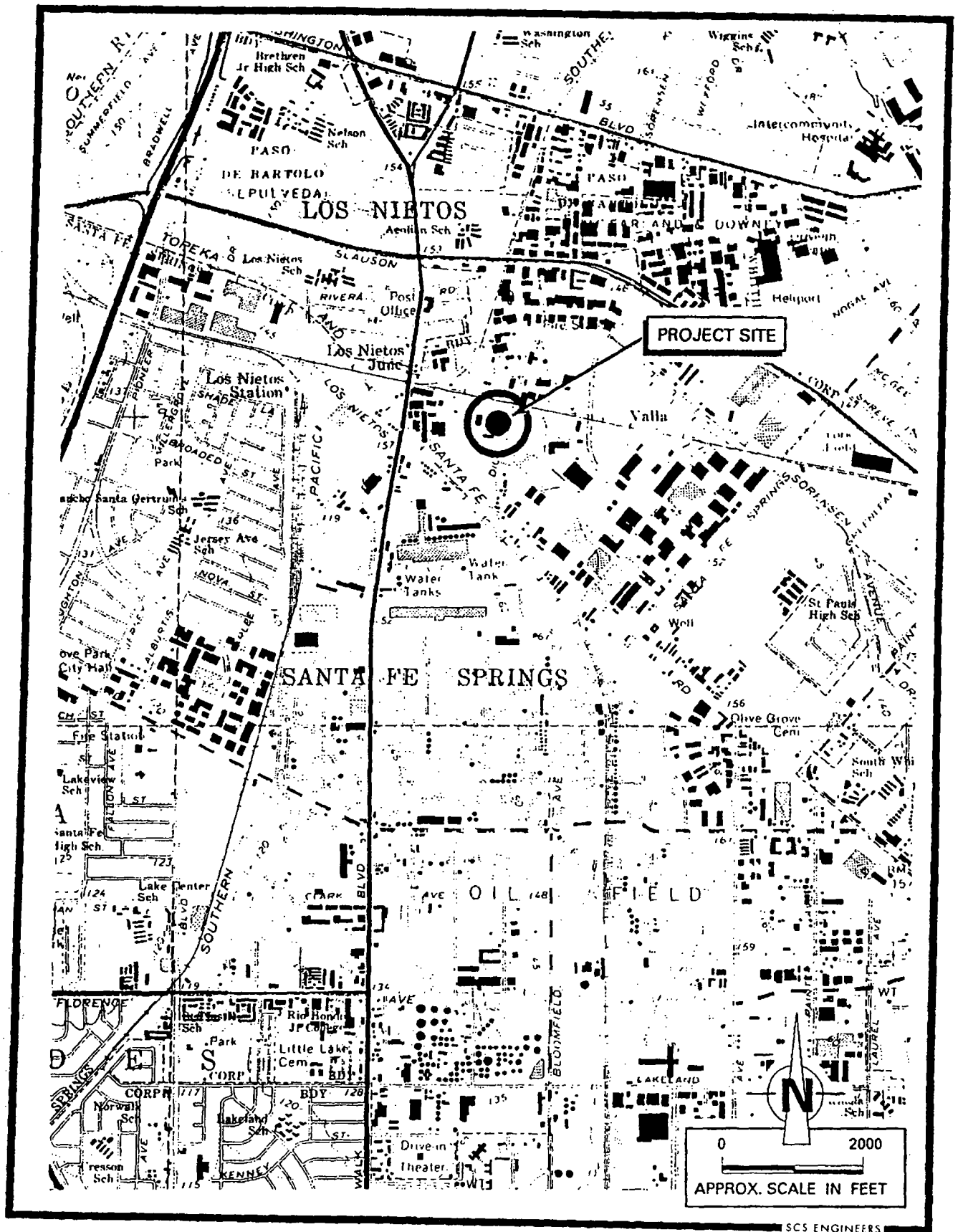


Figure 1. Map Showing Location of Project Site.

The subject property is currently vacant and DC ceased operations at the subject site in 1992. The subject property consists of the following:

- 5.68 acre parcel with rainwater drainage basin located in the northwestern portion of the property that was constructed in the late 1980's by Oltmans during development of the adjacent properties.
- Large rectangular-shaped building and adjoining warehouse occupying an approximate area of 67,000 SF. Office area occupies approximately 3,300 SF.
- Metal storage building located on the west side of the property (a portion of which was formerly used as a hazardous waste storage area).
- Concrete block wall bermed areas on the south side of the building that were used for above ground storage tanks.

Inspection of the site and review of available information indicates that four ground water monitoring wells exist on the subject property (installed in 1985 and later). However, only three of the wells have been recently used for ground water analysis (the fourth well, MW1, was apparently paved over and cannot be located).

No odors were noted and no significant areas of stained soils were observed on the subject property. However, most of the subject property is covered by the buildings currently on the property.

Inspection for PCB-Containing Electrical Transformers

Inspections for possible polychlorinated biphenyl (PCB)-Containing electrical transformers and related equipment were conducted during the site visits. Three pole-mounted electrical transformers and associated equipment were observed on the east end of the subject site.

These transformers are owned and maintained by Southern California Edison (SCE). SCE has stated that they have never specified the purchase of distribution transformers utilizing PCBs as the insulating/cooling fluid. SCE transformers utilize mineral oil as the insulating/cooling fluid exclusively. In a statistically valid test of over 20,000 SCE distribution transformers, SCE determined that the concentrations of PCBs in the mineral oil was less than 50 parts per million (ppm) in over 96 percent of the units.

Therefore, the transformer in question probably do not contain concentrations of PCBs over 50 ppm. It should be noted that no signs of leaking fluids were observed during the inspection of the transformer. No significant environmental impact to the subject property is anticipated as a result of these transformers.

Preliminary Inspection for Asbestos-Containing Building Materials (ACBMs)

As part of this environmental assessment, the building was inspected visually for obvious signs of ACBMs. The manufacture of most ACBMs (except roofing tars/mastics) ended in the late 1970's. However, existing inventories of products could still be used. In addition,

roofing tars and mastics can still contain asbestos. Thus, ACBMs can be present in building materials regardless of age or date of construction (for example, in roofing felt, vinyl flooring, dry wall mud, etc.). However, with the exception of roofing tars and mastics, buildings constructed around and after 1985, in general, have a low potential for ACBMs. Building permits indicate that the building was constructed in 1953/54. Therefore, it is likely that some of the building materials observed contain asbestos.

In January 1998, SCS conducted an asbestos investigation of the building located at 8921 Dice Road. The results of the investigation indicated that asbestos was identified in the following areas on the subject property:

- Vinyl floor tiles and some mastic in office area
- Pipe lagging and aircell insulation in east warehouse area
- Asbestos-containing transite pipe in powder area and east warehouse
- Asbestos-containing roofing mastic

The cost to remove asbestos-containing materials from the on-site structures is estimated to be in the range of \$8,000 to \$15,000. SCS recommends that the ACBMs be appropriately removed prior to demolition of the building. A copy of the asbestos report is provided in Appendix C.

SUMMARY OF PREVIOUS ENVIRONMENTAL ASSESSMENTS

Numerous environmental investigation assessments have been conducted at the subject site since 1985. Consultants that have performed work on the site include:

- J.H. Kleinfelder (1985, 1986, and 1989)
- Thorne Environmental (1989)
- Emcon (1991, 1994)
- Environmental Strategies Corp. (ESC) [1996 to present]

Results of previous investigations indicate that the subject property was contaminated with petroleum hydrocarbons related to kerosene from an underground pipeline (on the south side of the building); the kerosene was formerly used as a feed material in the on-site manufacturing process. In addition, monitoring of ground water wells on the property confirmed the presence of volatile organic compounds (VOCs) in ground water beneath the subject property.

In March 1992, the California Environmental Protection Agency - Department of Toxic Substances Control (DTSC) provided Diversey Wyandotte official closure of two container storage areas and a 2,500 gallon treatment tank at the facility. The hazardous material storage area was located at the southern end of the metal storage building currently located on the western end of the subject property. DTSC stated that "the Department now considers the hazardous waste management units officially closed as November 22, 1991.

In June 1994, DC entered into a voluntary cleanup agreement with DTSC. Emcon submitted a workplan for remediation of kerosene-impacted soils to DTSC in August 1995. In 1996, the site was referred to the Los Angeles Regional Water Quality Control Board (RWQCB) as the lead agency since contamination was associated with petroleum hydrocarbons.

In April 1997, a soil vapor extraction system was placed into operation for removal of kerosene from subsurface soils. By the end of 1997, more than 765 pounds of kerosene had been removed from the impacted area using the vapor extraction system.

In December 1997, the RWQCB agreed that further operation of the vapor extraction system would not result in achieving significant reduction of residual hydrocarbons that remained on the subject property. Therefore, the vapor extraction system was removed from the site by ESC on March 13, 1998. Additional information related to the above-referenced site activities is provided in Appendix D.

CURRENT REGULATORY SITE STATUS

Discussions with Jenny Au (case officer at the RWQCB) and review of relevant agency correspondence indicates that further assessment of soils and/or groundwater for VOCs will not be required at this time by the RWQCB. However, since free-product kerosene was detected during the February 1998 groundwater monitoring event, the RWQCB has requested that groundwater be monitored for free-product on a quarterly basis for one year (until February 1999) and that a Phase I assessment be completed for the subject site.

In addition, the RWQCB has requested that soils beneath the footprint of the on-site building be inspected (and possibly sampled for analysis) after demolition activities have been completed. Relevant correspondence between the RWQCB and ESC is provided in Appendix E.

HISTORICAL PROPERTY USE

Historical property use information for this report was derived from a variety of sources. A discussion of the information obtained from each source is presented for each site in the following narrative.

Topographic Maps

The U.S. Geological Survey, Whittier, California 7.5 minute quadrangle map (1965, photorevised 1981) was reviewed as part of this assessment. The map shows the subject property with the existing structure. No other significant features or concerns were identified from this source.

Aerial Photographs

Historical aerial photographs from 1959, 1963, 1977, 1988, and 1991 in the City of Santa Fe Springs Planning Department aerial photo collection were reviewed.

Relevant information contained in historical aerial photographs is summarized in the following narrative.

1991 Photo

This is a color photo that shows the subject site pretty much in its configuration during operation of the facility in the early 1990's. Above-ground storage tanks are evident on the south side of the warehouse buildings on the on the on north and west side of the original main building. The drainage pond is very evident in the northwest corner of the property. The southwest corner of the is used for storage of materials. Adjacent properties to the west and south are developed with concrete tilt up buildings. Altamar Place is evident and the site is bordered to the north by railroad tracks. A large industrial operation is located north of the site across the railroad tracks.

1988 Photo

Very similar to 1991 photo with the exception of the drainage pond. The area where the drainage pond is evident in the 1991 photo appears to be filled with soil and graded. Only the building to the west is evident. Other adjacent property is largely undeveloped. Industrial operation to the north is clearly evident. Railroad spur into the site is evident on the northern portion of the subject property. Pole mounted transformers can be seen on east side of the building along Dice Road. Large white metal building is shown in the southwest portion of the site.

1977 Photo

Site is still in current configuration, however, most adjacent property is vacant land. Altamar Place is not shown in this photo. The drainage pond area is at grade and rail cars are shown on the northern end of the building. The large metal building for hazardous material storage is not evident in this photo and the area was apparently used for general storage.

1963 Photo

On-site building is shown without the western warehouse addition. Photo shows what appears to be an addition to the north end of the building that is in the process of construction. Industrial facility is present to the north of the subject property. Adjacent property is vacant. Land to the east appears to be used for agriculture (crop rows evident). No oil related activity obvious from photo. No obvious environmental concerns identified.

Area where metal building for hazardous material storage is vacant and used for above ground storage containers. A medium size building is shown west of the main on-site structure.

1959 Photo

Very similar to 1963 photo. Rail spur is shown on west side of the building. Adjacent land to the subject property is vacant. Pole-mounted transformers are evident on east side of the property. Large metal building appears to be closer to main building and railroad spur than in later photos.

Sanborn Maps *show chemical storage for insurance purpose*

The Sanborn Mapping and Geographic Information Service indicated that there are no Sanborn maps available for this area.

Building Department Records

The City of Santa Fe Springs Department of Building and Safety permit files were reviewed for the address 8921 Dice Road. All permits on file were related to Wyandotte Chemical Company and date from 1953 to the early 1990s's.

The earliest document on file was a grant deed dated November 12, 1953 from Pacific Electric Land Company to Wyandotte Chemical. The earliest building permit was dated February 17, 1954 for approval of manufacture of chemicals as described to the Planning Commission for liquid cleaning compounds, insecticides, and antifreeze.

A sewer/sewage disposal permit for five 40-foot deep disposal pools was issued on April 21, 1954 for the subject property. These disposal pools were apparently located in the asphalt paved area south of the buildings located on the subject property. A copy of a 1979 map showing the location of the pools and other relevant documents are provided in Appendix F.

Available information indicates that the warehouse in the southwestern portion of the property was added after 1967. The southern boundary of this building is where kerosene contamination has been identified (the bulk of which has been removed by vapor extraction that was ceased in March 1998).

Other permits on file were for various plumbing, electrical, and HVAC activities associated with the property. The most recent permit was dated 1992 for installation of a sign along Dice Road.

Summary

The site was originally developed and used exclusively for the manufacture of industrial strength cleaning detergents from 1954 to 1992. Review of available information does not suggest that hazardous materials such as heavy metal compounds or volatile organic compounds (such as chlorinated solvents) were used in any significant quantities at the subject property during its years of operation.

Disposal pools were apparently used for disposal of non-hazardous wastewater generated at the facility. However, results of ground water monitoring do not indicate that the site has contributed to regional ground water contamination that has been identified on the site and in the area.

REGIONAL GEOLOGIC, HYDROGEOLOGIC, AND TOPOGRAPHIC INFORMATION

The subject site is located on the Los Angeles Coastal Plain within Section 6, Township 3 South, Range 12 West, at an elevation of approximately 150 feet above mean sea level. The nearest surface water body is the San Gabriel River, approximately 1 mile west of the

site. Site topography is essentially flat with a gentle regional gradient toward the southwest. Geologic maps indicate that surficial sediments in the area of both sites are composed of Quaternary marine and continental deposits of the Lakewood Formation.

The site is located within the Montebello Forebay Area of the Central Groundwater Basin. First groundwater is anticipated to be encountered within the Gage Aquifer at a depth between 40 and 80 feet below ground surface. Groundwater flow is anticipated to be to the south-southwest.

REGIONAL LAND USE INFORMATION

The subject property and surrounding land have been developed for industrial and commercial development. Adjacent property to the west and south was developed by Oltmans Investment Company and is used for a variety of commercial and industrial enterprises. Large industrial facilities are located east (directly across Dice Road) and north (across railroad tracks) from the subject property. No residential development was observed within 1,000 feet of the subject property.

REGIONAL INVESTIGATION OF HAZARDOUS MATERIALS SITES

Local regulatory agencies were contacted in an effort to identify any known/suspected contamination sites or incidents of hazardous waste storage or disposal violations on or within one mile of the subject property. In the City of Santa Fe Springs, the Santa Fe Springs Fire Department is typically the lead agency for underground storage tank compliance and removals. If ground water contamination is suspected, the Los Angeles Regional Water Quality Control Board (LARWQCB) generally acts as the lead enforcement agency in supervising contaminant characterization and cleanup. The California Environmental Protection Agency (CalEPA), Department of Toxic Substances Control (DTSC), formerly the California Department of Health Services (DHS), may provide oversight for facilities with hazardous waste contamination not associated with underground tanks. Table 1 presents a list of agencies contacted for this study.

In addition, Vista Environmental Solutions, Inc. (Vista) of San Diego, California was contacted for a database report on sites listed on various federal and state databases within one mile of the subject site. A description of each of the databases searched is included in the Vista Report, which is attached as Appendix G. The Vista databases include National Priorities List (NPL), Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), CERCLIS - No Further Remedial Action Planned Sites Report (NFRAP), Leaking Underground Storage Information System (LUSTIS), Calsites, Solid Waste Information System (SWIS), Environmental Response Notification System (ERNS), Toxic Release Inventory System (TRIS), Toxic Pits, etc.

Any sites included on these lists within 0.25 miles of the subject site are discussed in the following text. As a general rule, sites beyond 0.25 miles are not anticipated to impact a site significantly. Any sites beyond 0.25 miles with a high potential to impact the subject site are also discussed. (Please note: the distances and directions listed in this report have been field-verified and may not always match those in the Vista report.)

TABLE 1
LIST OF REGULATORY CONTACTS

Los Angeles Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, California 91754-2156
(213) 266-7500

Cal-EPA
Department of Toxic Substances Control
1011 North Grandview Avenue
Glendale, California
(818) 551-2886

City of Santa Fe Springs
Department of Building and Safety
Planning Department
11710 Telegraph Road
Santa Fe Springs, California 90670
(562) 868-0511

State of California Department of Conservation
Division of Oil and Gas
5816 Corporate Avenue - Suite 200
Cypress, California 90630
(714) 816-1047

City of Santa Fe Springs
Fire Department
11300 S. Greenstone Avenue
Santa Fe Springs, California 90670
(562) 944-9713

Los Angeles County Fire Department - Health HazMat Division
5823 Rickenbacker Road
Commerce, CA 90040
(213) 890-4045

The Vista databases also include USTs, above ground storage tanks, Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) facilities, and RCRA hazardous waste generators. These sites use or store hazardous materials and thus may pose a potential problem in the event of a spill or leak. However, unless these sites also appear in an agency list of contaminated sites, there is no evidence of any problems at this time. Therefore, sites on these lists will not be discussed unless on or adjacent to the subject property. Please refer to Appendix G for further information on these sites.

In addition to the above, SCS also reviewed several City/county lists of contaminated sites, oil and gas well maps, lists of polluted ground water wells, and county landfill maps. Any contaminated sites identified in these references within one mile of the subject sites are listed and discussed below. Each of the subject sites is discussed separately.

Potentially Contaminated Sites

A total of 112 sites (numerous sites with multiple listings) within a 0.25 miles radius of the subject property are listed in the Vista database as follows:

- Three RCRA Corrective Actions sites (USEPA CORRACTS)
- Two state equivalent priority list sites (SPL)
- Six state equivalent CERCLIS list sites (SCL)
- Eight sites under review by USEPA (USEPA CERCLIS/NFRAP)
- Twelve leaking underground storage tank sites (LUST)
- One permitted solid waste landfill, incinerator, or transfer station (SWLF)
- Nine state index of properties with hazardous waste (CORTESE)
- Three RCRA violations/enforcement action sites (RCRA Viol)
- Six toxic release inventory system database site (TRIS)
- Twenty-eight registered underground or aboveground storage tanks (UST/AST)
- Fourteen unique county database sites (UNIQUE CO)
- Fourteen emergency response notification system of spills sites (ERNS)
- Six RCRA registered generators of hazardous waste (GNRTR)

The subject property appears on 10 regulatory database lists in the Vista report. The following potentially contaminated sites were listed within 0.25 miles of the subject site.

<u>Site Name</u>	<u>Approximate Distance and Direction from Subject Site</u>
Former Diversey Corp. site 8921 Dice Road Santa Fe Springs, CA 90670 (10 listings)	Subject property
T-Chem Products Inc. 9028 Dice Road Santa Fe Springs, CA 90670 (RCRA SmGen/LUST/UST/TRIS/ERNS)	0.03 miles E

Arrow Transportation 0.05 miles S
9041-1 Dice Road
Santa Fe Springs, CA 90670
(ERNS)

Yuasa Exide Inc. 0.05 miles S
11936 Altamar Place
Santa Fe Springs, CA 90670
(RCRA Sm Gen)

So Cal Chemical Co. 0.05 miles N
8851 Dice Road
Santa Fe Springs, CA 90670
(ERNS/SCL/UST/TRIS/CERCLIS/NFRAP)

Phibro Tech Inc. 0.05 miles N
8851 Dice Road
Santa Fe Springs, CA 90670
(CORRACTS/RCRA LgGen/RCRA Viol)

Burdett Oxygen of CA 0.08 miles N
8838 Dice Road
Santa Fe Springs, CA 90670
(CERCLIS/NFRAP/SCL/LACo Site Mtg.)

Schnee Morehead Inc. 0.09 miles N
8835 Dice Road
Santa Fe Springs, CA 90670
(RCRA SmGen)

Liquid Air Corp 0.10 miles N
8832 Dice Road
Santa Fe Springs, CA 90670
(CERCLIS/SCL/LUST/CORTESE/LACo Site Mtg.)

Witco Corp 0.14 miles N
8733 Dice Road
Santa Fe Springs, CA 90670
(RCRA SmGen/UST/TRIS/ERNS)

Dice/Los Nietos Roads Dump 0.16 miles S
9165 Dice Road
Santa Fe Springs, CA 90670
(CERCLIS/NFRAP/SCL/LACo Site Mtg./MUDS)

Pilot Chemical 0.16 miles N
11756 Burke Street
Santa Fe Springs, CA 90670
(CERCLIS/NFRAP/LUST/LACo Site Mtgn/TRIS/CORTESE)

Flight Trucking 11770 Burke Street Santa Fe Springs, CA 90670 (LUST)	0.16 miles N
McKesson Chemical Company 9005 Sorensen Avenue Santa Fe Springs, CA 90670 (SPL/LUST/LACo Site Mtg./CORTESE/CERCLIS/NFRAP/CORRACTS)	0.19 miles E
Vacant Lot 9020 Sorensen Avenue Santa Fe Springs, CA 90670 (LACo Site Mtg.)	0.20 miles E
Peterson/Puritan Inc. 9101 Sorensen Avenue Santa Fe Springs, CA 90670 (LUST)	0.22 miles E
Witch Corp Oleo/Surfactants Group 12143 Altamar Place Santa Fe Springs, CA 90670 (TRIS)	0.20 miles SE
Palley Property/Talco Plastics 11630 Burke Street Santa Fe Springs, CA 90670 (LACo Site Mtg.)	0.21 miles NW
Angeles Chemical 8915 Sorensen Avenue Santa Fe Springs, CA 90670 (SPL/LUST/LACo Site Mtg./CORTESE)	0.21 miles E
West Bent Bolt 8623 Dice Road Santa Fe Springs, CA 90670 (CORTESE/TRIS/CERCLIS/NFRAP/SCL/LACo Site Mtg.)	0.22 miles N
ACI Glass Products 9010 Norwalk Blvd. Santa Fe Springs, CA 90670 (LUST/CORTESE)	0.22 miles W
Nacho's Batteries 8917 Norwalk Blvd. Santa Fe Springs, CA 90670 (LACo Site Mtg.)	0.23 miles W

C.F. Peng Service Station
8905 Norwalk Blvd.
Santa Fe Springs, CA 90670
(LUST/CORTESE)

0.23 miles W

Plas-Tal MFG Co./Vandenberg AFB
8815 Sorensen Avenue
Santa Fe Springs, CA 90670
(LUST/CORTESE)

0.25 miles NE

The former Diversey Corporation site is listed as a property that had environmental issues related to aboveground and underground tanks, hazardous waste generator status, RCRA violations, etc. Most of the items related to environmental issues have been resolved, investigated, and/or remediated to the satisfaction of the appropriate lead regulatory oversight agencies. As discussed previously, a few minor environmental concerns (e.g., monitoring of free-product kerosene and inspection of soil beneath building after demolition) remain to be completed in the near future.

With the exception these concerns and requirements, SCS does not recommend conducting further assessment of the subject property for hazardous material contamination.

The T-Chem Products facility is located east (across Dice Road) of the subject property and is identified as a hazardous waste generator, a leaking underground storage tank site, an emergency release notification system site, etc. Review of available information indicates that an underground tank leak affected soils only. In 1992, a release of chlorine was reported that did not result in any significant impacts to the environment. Based on this information, no significant environmental impact to the subject property is anticipated.

Arrow Transportation is listed as an ERNS site that had a 60 gallon spill of benzenesulfonic acid chloride in 1990. Based on the nature of the material, date of release, and relative location of the site, no environmental impact to the subject property is anticipated.

Yuasa Exide, Schnee Morehead Corp., and Witco Corporation are all listed as small quantity hazardous waste generators. In addition, Witco is also listed as an ERNS (methanol spill) and TRIS (methanol, ethylene oxide, ethylene glycol) site. Based on review of available information, distance of these sites relative to the subject property, and the fact the contamination has not been verified at these sites, no significant environmental impact to the subject property is anticipated.

The Southern California Chemical (SCC)/Phibro Tech Inc. facility is located north of the subject property across the railroad tracks. SCC is listed as a site with numerous contaminants or potential contaminants including:

- Heavy metals
- Hydrochloric and chromic acid solutions
- Alkaline waste waters

- Hazardous waste sludges
- Copper chloride and chlorine spills

ESC conducted a review of regulatory files related to SCC/Phibro Tech as outlined in their March 27, 1998 letter to Jenny Au at the RWQCB (see Appendix E). Based on regulatory information, it appears that SCC/Phibro Tech has contributed to VOC contamination in ground water in the region and possibly beneath the former Diversey Corp. property.

Although a Consent Order was executed on December 8, 1988, EPA Region IX under RCRA and DTSC Region III assumed regulatory oversight for the SCC site, to date, SCC has not performed any corrective actions at their facility.

Burdett Oxygen is located approximately 0.1 miles north of the subject property and apparently is a related operation to the Liquid Air Corp. site located at the 8832 Dice Road. Collective information for these facilities indicates that acetylene sludges have been disposed into unlined pits since 1949 and also have been discharged into Coyote Creek in the past (1977). The facility also had a leak of diesel fuel that occurred in 1990. However, only soil was affected. Based on the nature of contamination, distance of the site to the subject property, and regulatory status, no significant environmental impact to the subject property is anticipated.

The Dice/Los Nietos Road Dump is located approximately 0.16 miles south of the subject property with an address of 9165 Dice Road. This site operated as a municipal solid waste disposal facility and ceased operations in the 1960's. The current regulatory status of the site is nor further remedial action planned and no further action for DTSC. Based on this information, no significant environment impact to subject property is anticipated.

Pilot Chemical is located approximately 0.16 miles north of the subject property and is listed as a site with acid sludges, above ground storage of hazardous waste, storage of drums, impacted groundwater related to diesel fuel, leaking underground tank related to VOCs, etc. Based on the nature of contamination, distance of the site to the subject property, and regulatory status, no significant environmental impact to the subject property is anticipated.

Flight Chemical is listed as a LUST site that impacted soil with diesel fuel in 1990. The status of the site is "case closed/cleanup complete." Therefore, based on this information, no impact to the subject property is anticipated.

The McKesson Chemical Company site is located at 9005 Sorensen Avenue, approximately 0.20 miles east of the subject property. This facility has contributed significant VOC contamination to groundwater in this particular area of Santa Fe Springs. However, based on the relative distance of the site to the subject property and anticipated direction of groundwater flow, no significant environmental impact to the subject property is anticipated.

The Peterson/Puritan Inc., C.F. Peng Service Station, Plas-Tal Mfg Company, and ACI Glass Products are listed as LUST sites which have affected soil only. Regulatory status for three of these sites is "case closed/cleanup complete," therefore, based on this information, no impact to the subject property is anticipated from underground tank leaks from these facilities.

The Witco Corp./Oleo Surfactants Group site is located approximately 0.20 miles southeast of the subject property and is listed as a TRIS site. A 500 pound release into the atmosphere of an unidentified material occurred from the Witco facility. Based on this information, no impact to the subject property is anticipated.

The Angeles Chemical facility is located at 8915 Sorensen Avenue, approximately 0.21 miles east of the subject property. This facility has operated as a solvent mixing and packaging facility for more than 30 years at this location. Available information indicates that soil and groundwater contain elevated levels of chlorinated and non-chlorinated solvent. Angeles Chemical is similar to the McKesson site regarding contributions of VOC contamination to groundwater in this particular area of Santa Fe Springs. However, based on the relative distance of the site to the subject property and anticipated direction of groundwater flow, no significant environmental impact to the subject property is anticipated.

The West Bent Bolt facility at 8623 Dice Road, is approximately 0.22 miles north of the subject property. Available information indicates that hazardous wastes (cyanides and heavy metals), petroleum contaminated soil, etc., have been identified at the subject property. Based on the relative distance to the subject property, nature of contamination (heavy metal plating wastes), and regulatory priority status (low), no significant environmental impact to the subject property is anticipated.

Landfills

Available information indicates that four landfills sites are located within 0.5 miles of the subject property. The closest site is the Dice/Los Nietos Road Dump located approximately 0.16 miles south of the subject property. However, as previously discussed, no significant environmental impact to the subject property is anticipated from historical activities associated with this disposal site.

The Waste Disposal Inc. site (12731 Los Nietos Road, Santa Fe Springs) is an industrial waste landfill located approximately 0.43 miles southeast of the subject property. This site is also on the federal Superfund list of sites. This site operated from 1928 to 1965 and received various liquid wastes. A wide range of organic compounds and lead have been detected in site soils. Groundwater contamination is suspected, but has not been confirmed. Based on the available information and direction of ground water flow, no impacts to the subject property are anticipated in the near future.

Oil and Gas Wells

A review of oil and gas well maps from the California Department of Conservation, Division of Oil and Gas (DOG) was conducted to identify oil and gas wells on the subject property

or in the nearby area. According to DOG Map No. 102 dated August 20, 1988, the subject property lies directly north of the Santa Fe Springs oil field, an historically active oil producing area.

The map shows that no oil-related activity has occurred on the subject property. The closest well (shown as plugged and abandoned) designated as "Campos" is located more than 0.25 miles south of the subject property near the intersection of Dice Road and Los Nietos Road.

In addition, a review of the October 1986, Gas "Hotspots" investigation report (A Study of Abandoned Oil and Gas Wells and Methane and Other Hazardous Gas Accumulations, GeoScience Analytical) was conducted as a part of this study. This report was conducted for the DOG to identify those areas in Southern California where, as a result of oil and gas exploration, dangerous accumulations of subsurface combustible gasses (primarily methane) may exist. The Santa Fe Springs Oil Field was one of the areas studied. One hundred and ten sites were sampled, with approximately half found to have methane accumulations above background levels.

Based on review of available information, the subject property is not located in an area of Santa Fe Springs that requires assessment of methane gas under the City of Santa Fe Springs (Methane Zone Ordinance No. 829).

SUMMARY

As stated in the report, numerous investigations of the facility and property have been conducted since the mid-1980's. Results of these investigations have indicated the following:

- The site was contaminated with kerosene from a leaking pipeline that was discovered in 1989. Vapor extraction to remove kerosene from impacted soils was implemented in 1997 and completed in early 1998.
- Since 1985, groundwater monitoring of wells on the subject property has confirmed the presence of VOCs, however, the subject site does not appear to be a contributor to groundwater contamination. Affected groundwater appears to be a regional or area-wide contamination scenario.
- Diversey obtained formal closure of the hazardous waste storage units and other regulated items/units formerly located at the subject property by the appropriate regulatory agencies.
- The Los Angeles Regional Water Quality Control Board (RWQCB) has requested that free-product kerosene be monitored in well MW4 on a quarterly basis for a period of one year (until February 1999). In addition, the agency has approved ESC's request to abandon remaining groundwater monitoring and extraction wells located on the property.
- ACBMs have been identified in vinyl floor tiles and mastic, pipe insulation, and roofing materials.

Although the site is identified on numerous regulatory database lists, review of available historical regulatory information and discussions with RWQCB staff indicate that only minor environmental issues still exist for the subject property. The concerns as identified by the RWQCB include:

- Completion and submittal of a Phase I report for the subject property to the RWQCB (this report will be submitted to the agency to fulfill this request).
- Continued monitoring of free-product kerosene for a minimum period of one year (thru February 1999).
- Inspection (and possibly sampling/analysis) of soil beneath the building footprint after the structure is demolished.

In addition to requests by the RWQCB, SCS also recommends that removal of ACBMs by a licenced asbestos abatement contractor be completed prior to demolition of the building.

In summary, based on review of historical information, site investigations completed to date, results of the site inspection, and discussions with regulatory agency personnel, it appears that the majority of environmental issues previously identified with the subject property have been addressed. Therefore, with the exception of the above-referenced items, SCS does not recommend conducting further investigation of the subject site for hazardous material contamination.



APPENDIX A
RESUMES OF PROJECT PERSONNEL

THOMAS DONG, R.E.A., PROJECT DIRECTOR

Education

M.S. - University of Southern California, 1979
Environmental Engineering

B.S. - California State University, Long Beach, 1976
Zoology

Registrations

Registered Environmental Assessor - California (No. 0331)

Affiliations

American Society of Limnology and Oceanography
Institute of Environmental Sciences

Professional Experience

Mr. Dong provides SCS with more than 15 years of technical and practical experience in environmental engineering, environmental chemistry, hazardous waste characterization and management, and project management.

As Hazardous Waste Engineering Director in SCS's Long Beach office, Mr. Dong oversees projects directly related to hazardous waste assessment and remediation. In addition, Mr. Dong has considerable technical environmental auditing and permitting experience including:

- Auditing of hazardous material handling operations and/or facilities.
- Environmental compliance auditing of specific industries such as automotive paint, marine boat repair, jewelry manufacturing, etc.
- Environmental compliance auditing of statewide maintenance facilities for Nevada Department of Transportation.
- NPDES permitting for groundwater treatment, on-site dewatering operations, and stormwater (40 CFR122-124).
- AQMD permits for vapor extraction systems utilizing catalytic and/or thermal oxidation.

Some of the recent projects Mr. Dong has participated in or managed are summarized below:

- Project Manager for hydrogeologic/geologic assessment of gasoline contamination in groundwater in Torrance, California. Responsible for development of workplan, site health and safety plan, and interfacing with L.A. County Health, DOHS, RWQCB.



THOMAS DONG (continued)

Twenty-five groundwater monitoring wells have been installed in an attempt to define groundwater gradient and water quality in the area.

- Directed sampling and analysis of point source wastewater discharges from major industrial facility located in Southern California. Environmental audit of operations was conducted prior to implementation of sampling/analysis program. Project results were incorporated into a baseline monitoring report for review by EPA.
- Responsible for developing a site investigation workplan, site remediation workplan, and site cleanup plan for plating site contaminated with heavy metals above Title 22 maximum levels for soils. Interfacing with regulatory agencies, site cleanup personnel, hazardous waste haulers, and drillers was required for the project.
- Project Director for hazardous waste engineering services for the City of Los Angeles Community Redevelopment Agency. This project involves interfacing with developers, remediation contractors, regulatory agencies, and community agencies for redevelopment of property in the downtown area of Los Angeles.
- Project Director for Well Installation Program (WIP) projects administered by the Water Quality Control Board - Los Angeles Region. These projects involve audits of hazardous material storage, use, and generation at facilities located within the federal Superfund groundwater contamination areas of the San Gabriel and San Fernando Valleys. Preparation of WIP workplans and investigation of sites for potential sources of groundwater contamination are required under WIP.
- Expert witness for various projects involving litigation with major oil company, paint formulator, real estate developer, major construction company, and municipalities.

Furthermore, Mr. Dong is well versed in laboratory procedures and instrumental analysis. He is very familiar with protocols involved in sample collection, preservation, storage, transport, chain-of-custody documentation, and QA/QC procedures that are necessary both in the field and laboratory. Mr. Dong's technical experience and project management skills have resulted in providing high quality services to SCS clients within proposed schedules and budget.

Publications

Dong, T., and M. Geyer. Real Estate Acquisition Liability. The Risk Management Letter. Publication of Warren, McVeigh, and Griffin, Inc. January/February 1987.

Dong, T., and B. Bennett. Preconveyance Audits of Real Properties. National Solid Wastes Management Association. October 1987.

Dong, T., and A. S. Childress. Air Emissions Issues Related to Contaminated Soil Cleanup in Populated Areas. Air and Waste Management Association. June 1991.

4/95/HW

THOMAS DONG (continued)

Dong, T., and J. A. Nuno. Phased Approach to Due Diligence Environmental Assessment. California Redevelopment Association Journal. August 1994.

LaConde, K., and T. Dong. Construction Site Threatened by Gasoline. Government Refuse Collection and Disposal Association Convention. Reno, Nevada. August 1986.

Marsh, J. R., K. W. Green, T. Dong. Phase I Assessments and Due Diligence: One and the Same? Environmental Engineering Forum, American Society of Civil Engineers, Environmental Engineering Division. Journal of Environmental Engineering. Volume 120. No. 6. Nov/Dec 1994.

Nuno, J. A., and T. Dong. Contracting with Environmental Consultants. California Redevelopment Association Journal. September 1994.



J. RODNEY MARSH

Education

B.S. - California State University at Long Beach, 1971
Chemistry

M.S. - Illinois Institute of Technology, 1974
Environmental Engineering

Affiliations

American Chemical Society

Professional Registrations

Registered Environmental Assessor - California (No. 328)
Environmental Manager - Nevada (No. EM-1121)

Professional Experience

Mr. Marsh is experienced in the chemical characteristics and environmental behavior of a variety of industrial and hazardous wastes and wastewaters. He is very familiar with current waste control regulations under CERCLA, RCRA, TOSCA, the Clean Water Act, the Clean Air Act, and corresponding State codes. He is an instructor for SCS's in-house health and safety training program and also teaches a graduate-level waste management course at California State University, Long Beach.

Mr. Marsh currently manages all of the SCS-Long Beach Phase I Environmental Assessment projects. He has completed or managed several hundred such assessments. He prepared the in-house guidance manual for the preparation of Phase I reports and has given several seminars and authored several articles on Phase I assessments.

Mr. Marsh has provided extensive research support for litigation and expert testimony efforts. Specific projects have included assessments of historical industrial waste management practices, evaluations of the environmental fate and transport of chlorinated solvents, and estimation of waste quantities and characteristics. Sites have ranged from small industrial facilities to major state and federal Superfund sites.

Mr. Marsh served as Senior Project Engineer on a remediation project involving a pesticide-contaminated former air strip in the Litchfield Park, Arizona, area. His responsibilities included design of sampling programs, data analysis to determine the extent of contamination, remediation cost estimating, and preparation of the Remedial Investigation report.

Mr. Marsh served in a similar capacity on a former petroleum refinery remediation project in Southern California. As Technical Advisor, he assisted in the sampling data evaluation and

10/95/HW



J. RODNEY MARSH (continued)

estimations of contamination extent. He also provided fate and transport data for the contaminants found at the site for the Remedial Investigation report. In addition, he prepared a preliminary risk assessment for the site and assisted in the data compilation and interpretation for the formal risk assessment.

For remediation at a former steel mill in Fontana, California, Mr. Marsh prepared a preliminary feasibility assessment and assisted in the review of bids and selection of prospective remediation contractors. Site contaminants included coal tar, steel slag, various heavy metal compounds, and volatile organic compounds.

Mr. Marsh served as Project Engineer for the preparation of an Environmental Impact Statement for a proposed hazardous waste treatment facility in Arizona. His responsibilities included developing estimates of the types and quantities of wastes anticipated, determining the most efficient and cost-effective combination of treatment and disposal alternatives for these wastes, and preparing a conceptual design for the facility.

Mr. Marsh was Project Manager on the preparation of three hazardous waste management plans. The first, for Yolo County, California, was prepared in response to the Tanner legislation and addressed every phase of hazardous waste generation, treatment, storage, disposal, control, education, and regulation in the County. The other two were local hazardous waste management plans prepared for the Cities of El Segundo and Glendora. These plans identified areas where the Cities' hazardous waste management goals differed from those of Los Angeles County.

Mr. Marsh was Project Manager on a study for the Nevada Department of Transportation to identify and inventory hazardous wastes generated by highway maintenance stations throughout the state. The study involved an assessment of degree of compliance with RCRA regulations and recommendations for improving compliance.

Mr. Marsh also managed three hazardous waste audit studies for the California Department of Health Services. These studies focused on automotive paint and body shops, marine yards, and precious metals industries and sought to identify hazardous wastes generated and techniques for minimizing, treating, or disposing of the wastes.

Mr. Marsh was Project Manager on two studies regarding small-quantity generator hazardous wastes in the North Hollywood, California, area for the Southern California Association of Governments. Both studies involved detailed surveys and inventories. The first concluded with a review of existing hazardous materials and waste management practices and recommendations for better management. The second involved an evaluation of regional treatment, storage, and disposal options, and the conceptual design of a collection system and hazardous waste transfer station.

Mr. Marsh has served as both Project Manager and field team member on two Naval Assessment and Control of Installation Pollutants Program Initial Assessment Studies, the Navy's version of the DOD Installation Restoration Program. These studies involved

J. RODNEY MARSH (continued)

comprehensive evaluations of current and past hazardous waste generation, management, and disposal practices on military facilities. Information was gathered via records searches, interviews, and site investigations.

Mr. Marsh was also the Project Manager and a field team member for several projects conducted for the California General Services Administration to identify and inventory PCB-containing electrical equipment at state-owned facilities, including state parks, correctional facilities, highway department stations, National Guard facilities, etc.

Mr. Marsh served as Senior Project Engineer on several Air Force studies to inventory hazardous wastes for Vandenberg Air Force Base. These projects involved all host base and tenant activities, including launch and between-launch activities associated with the space shuttle, and Titan and Atlas launch facilities. The project team evaluated all of these operations and the chemicals and materials involved in them, and produced an expected inventory of wastes which included type of waste, chemical constituents, normal expected quantities, and "worst case" quantities.

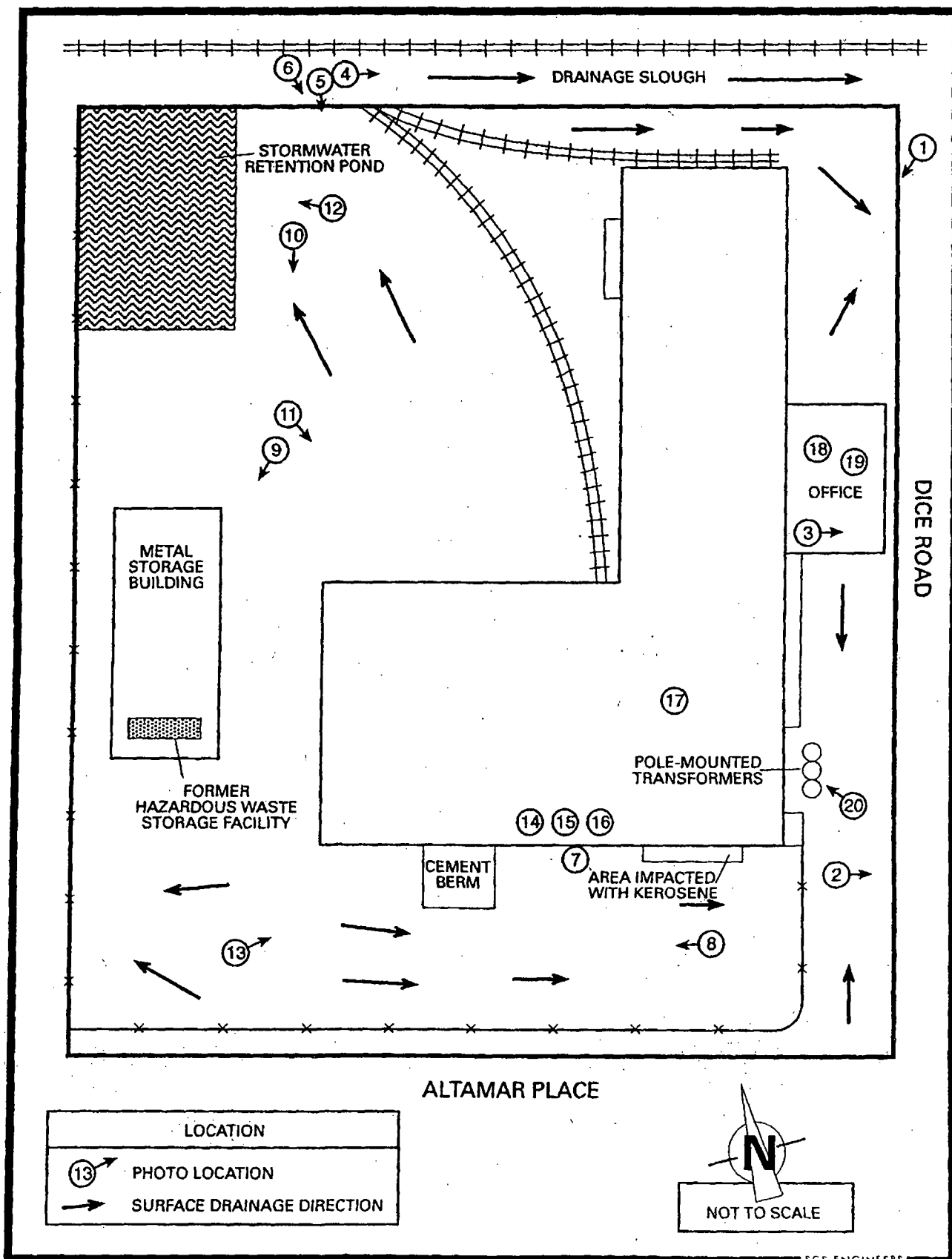
Mr. Marsh completed an inventory of the contents of a hazardous waste/oily waste landfill to determine if its operations were in strict accordance with federal and state regulations. This study involved a detailed analysis of hauler records to determine what wastes had been accepted by the landfill, and how they had been treated or disposed. Of particular concern was whether incompatible or unusually dangerous wastes had been buried in close proximity or in such a way as to endanger continued operations at the site.

Mr. Marsh's other projects related to hazardous waste management include:

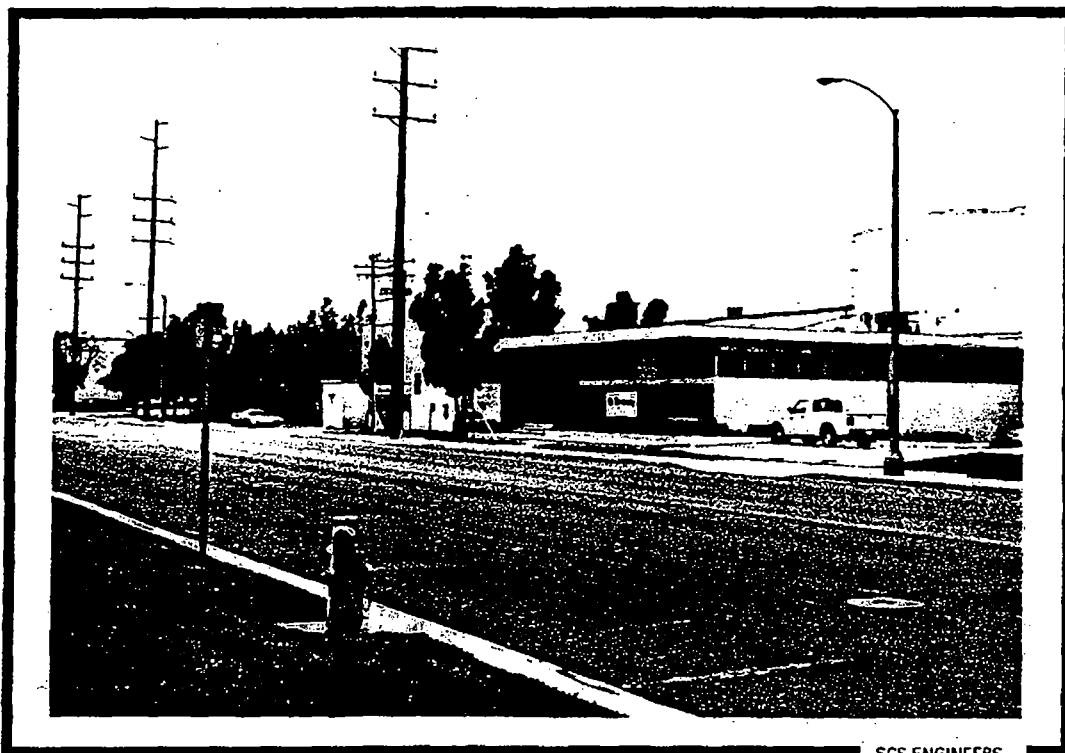
- Facility hazardous materials and waste compliance assessment audits.
- Evaluation of alternatives for treating and disposing of dilute pesticide solutions at applicator air fields (for EPA).
- Determine the relative health effects of wastewater treatment processes based on literature citations (for EPA).
- Performance review of Class I disposal sites in California, including assessment of the operating history and reported emissions at all active and some now-closed sites (for State of California).
- Feasibility studies for remediation of sites contaminated with pesticides, dioxins, and coal tar.

APPENDIX B

SKETCH MAP AND PHOTOGRAPHS OF SUBJECT SITE



Sketch Map of Site Showing Locations of Photographs.



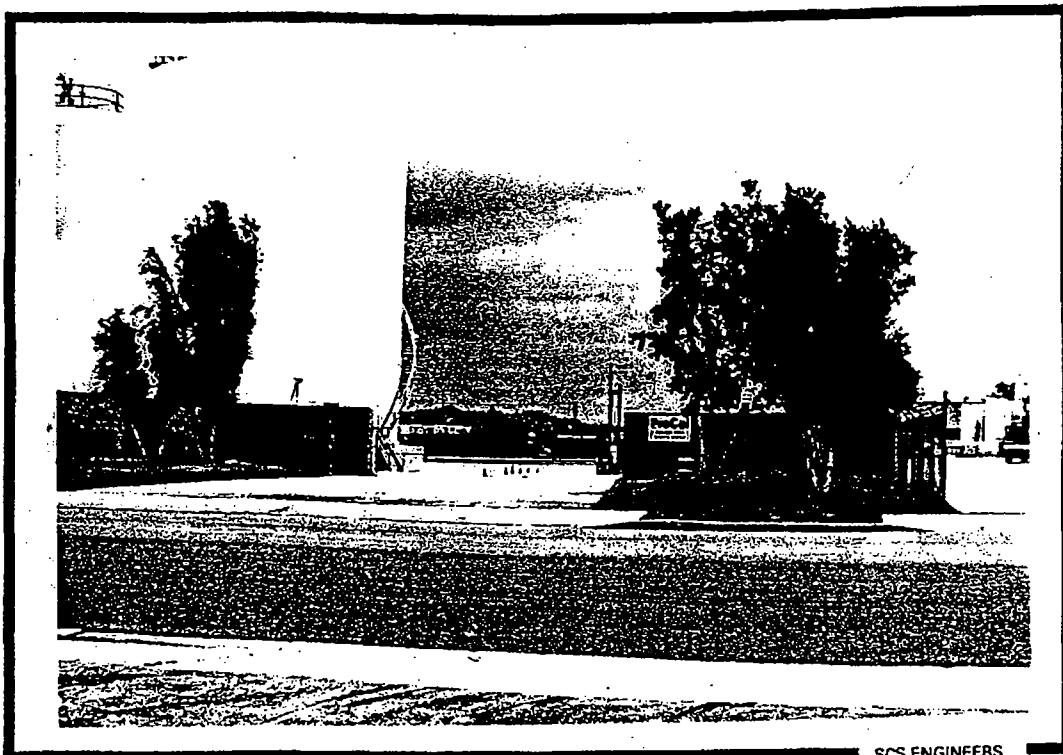
SCS ENGINEERS

Photo 1. View of Former Diversey Plant Located at 8921 Dice Road.



SCS ENGINEERS

Photo 2. T-Chem Products Located East (Across Dice Road) at 9028 Dice Road.



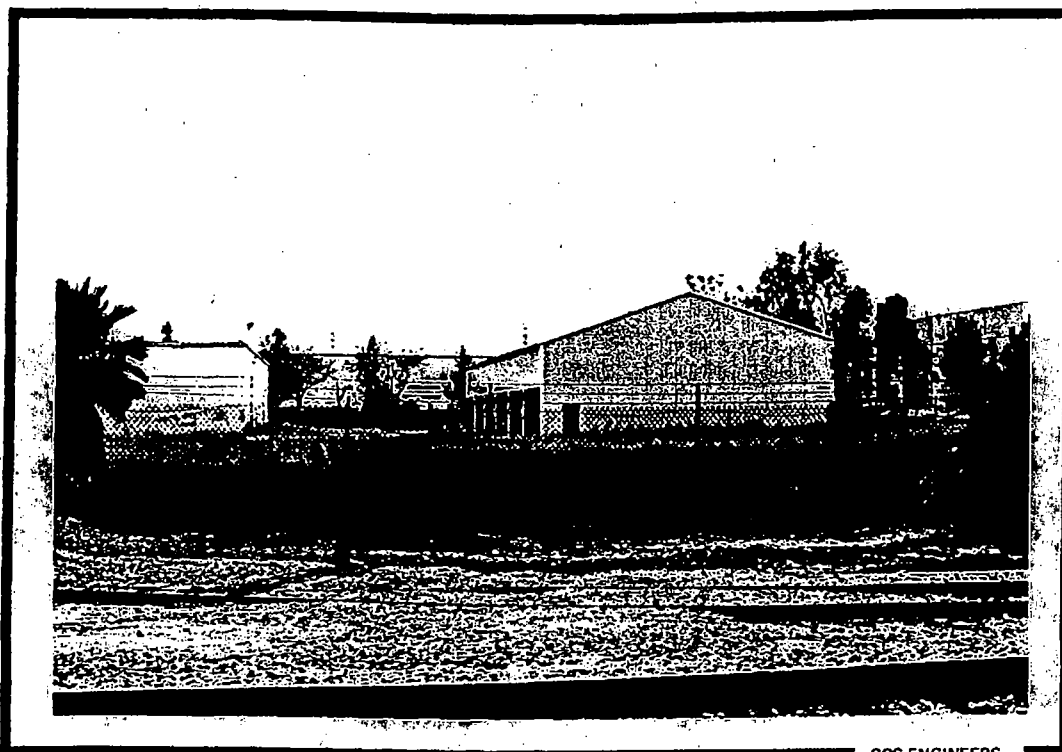
SCS ENGINEERS

Photo 3. Pro Cal Plant Located East (Across Dice Road) at 8934 Dice Road.



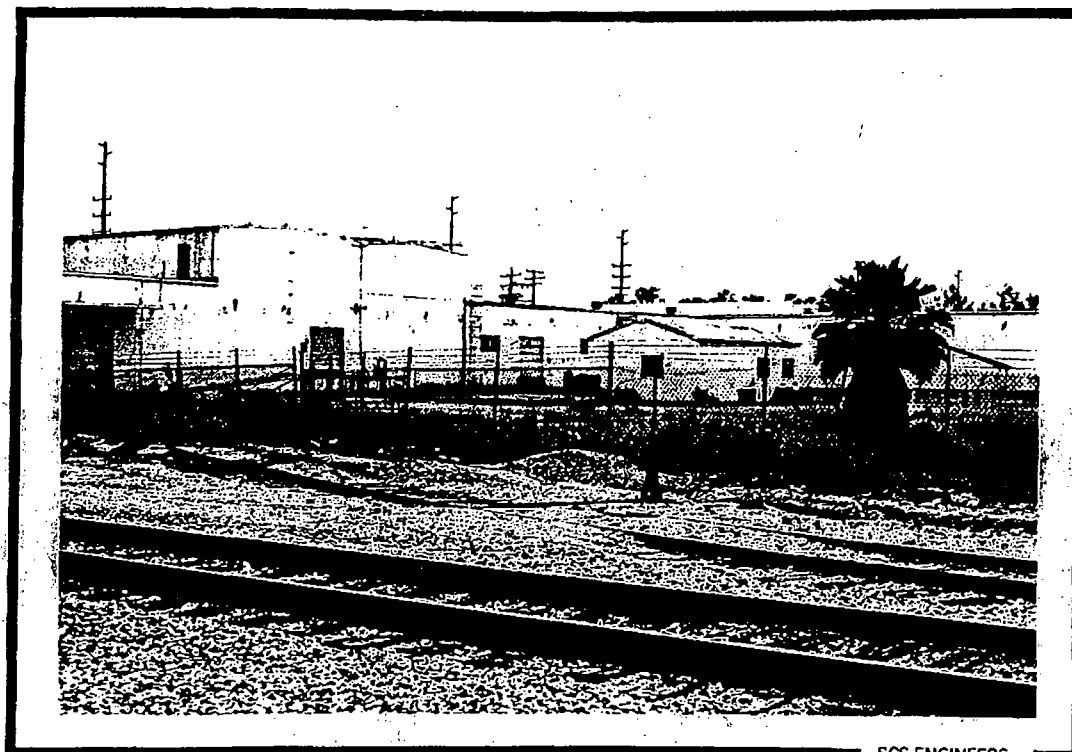
SCS ENGINEERS

Photo 4. Drainage Slough and Railroad Tracks That Form Northern Boundary of Subject Property.



SCS ENGINEERS

Photo 5. View of Stormwater Retention Pond and Metal Storage Building from Railroad Tracks North of Subject Property.



SCS ENGINEERS

Photo 6. View of Railroad Spur Formerly Used at Facility.



Photo 7. View of Area on South Side of Building Where Free-Product Kerosene Was Detected in Monitoring Well MW4 During February 1998 Groundwater Sampling.

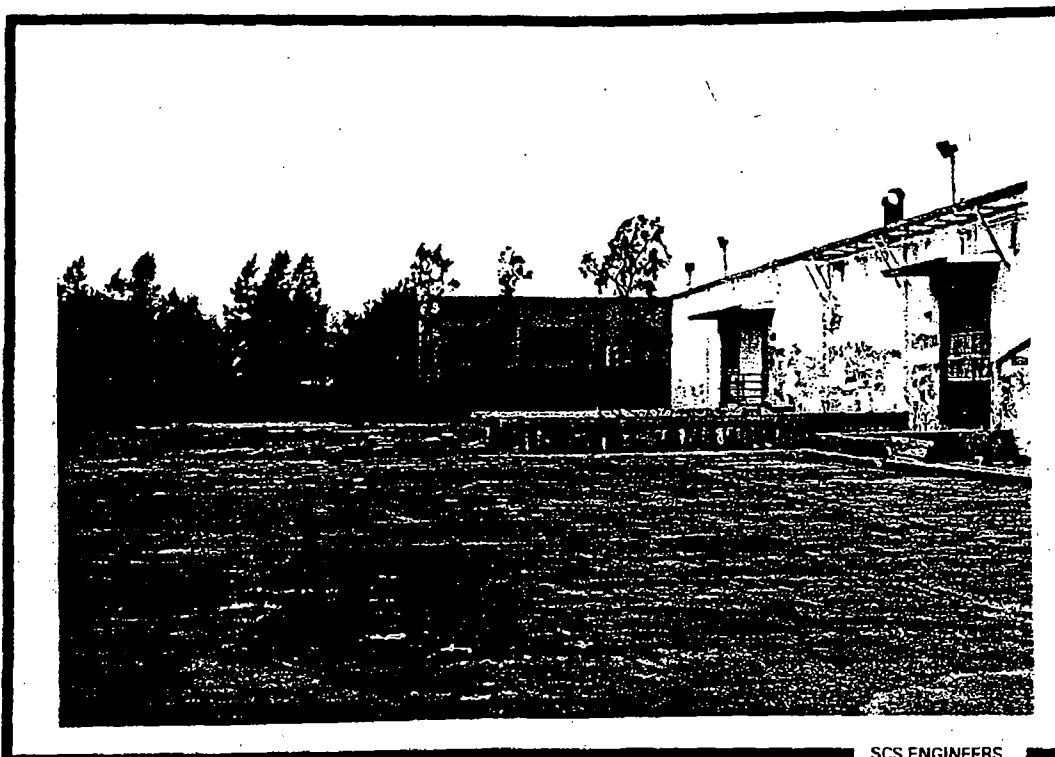
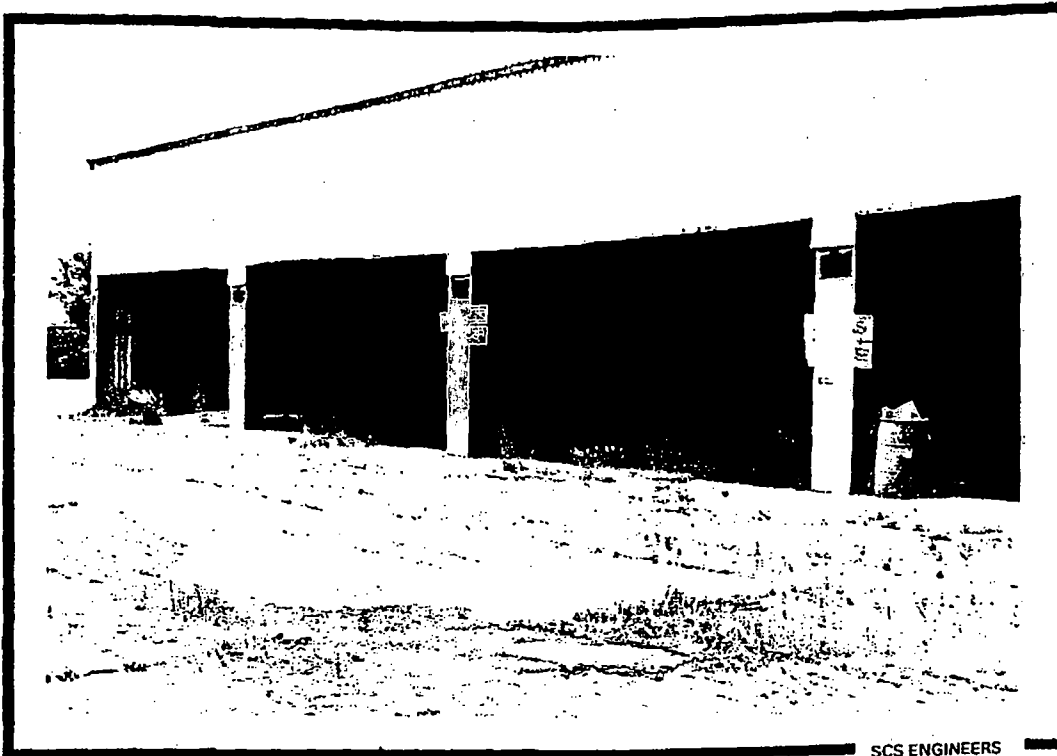
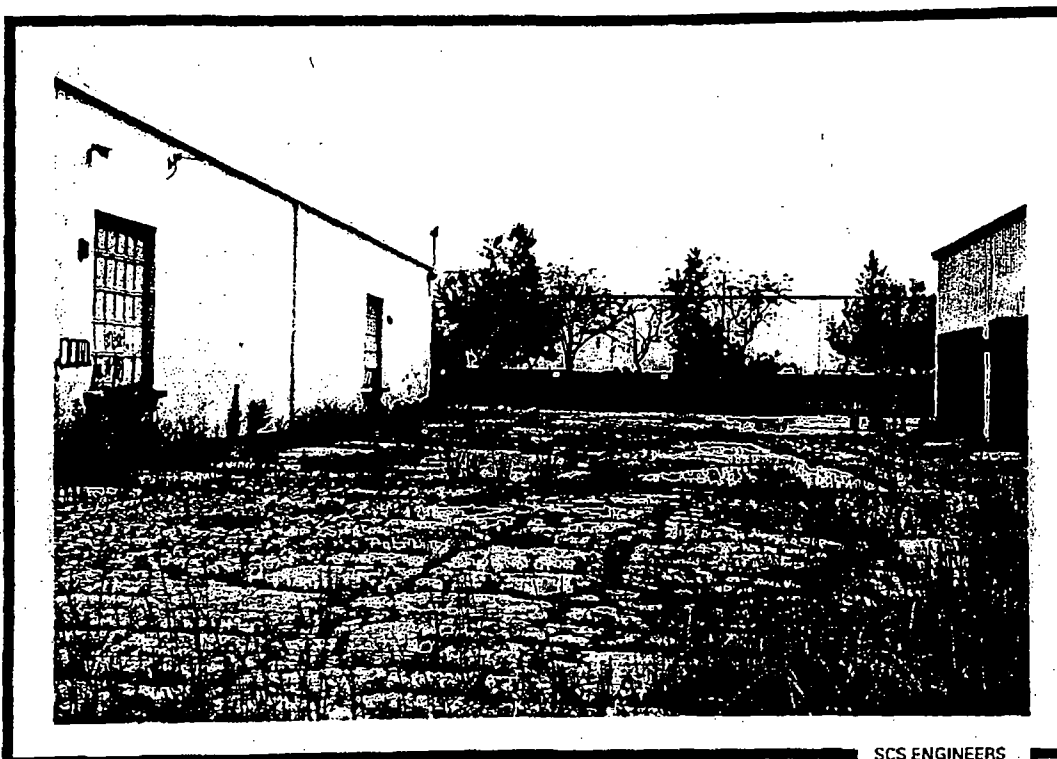


Photo 8. View from Southeast Corner of Property Looking to West; Concrete Bermed Area Previously Used for Above-Ground Storage Tanks.



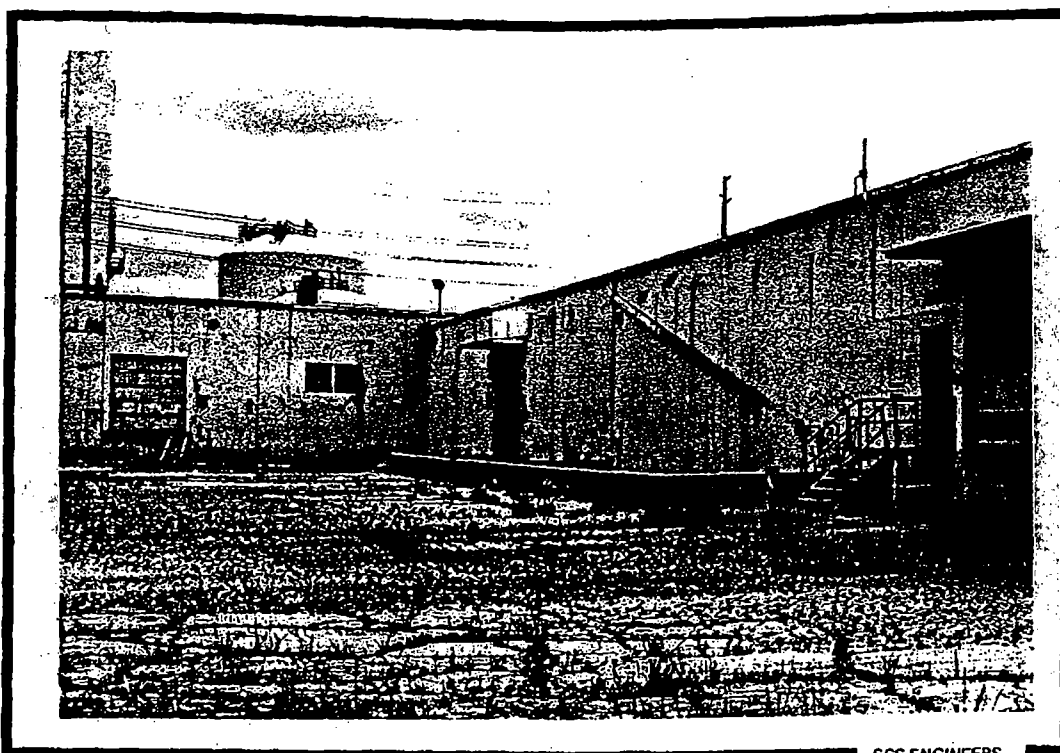
SCS ENGINEERS

Photo 9. Metal Storage Building Located on West Side of Property; Bermed Area with Ramp at Far End Was Formerly Used for Storage of Hazardous Materials.



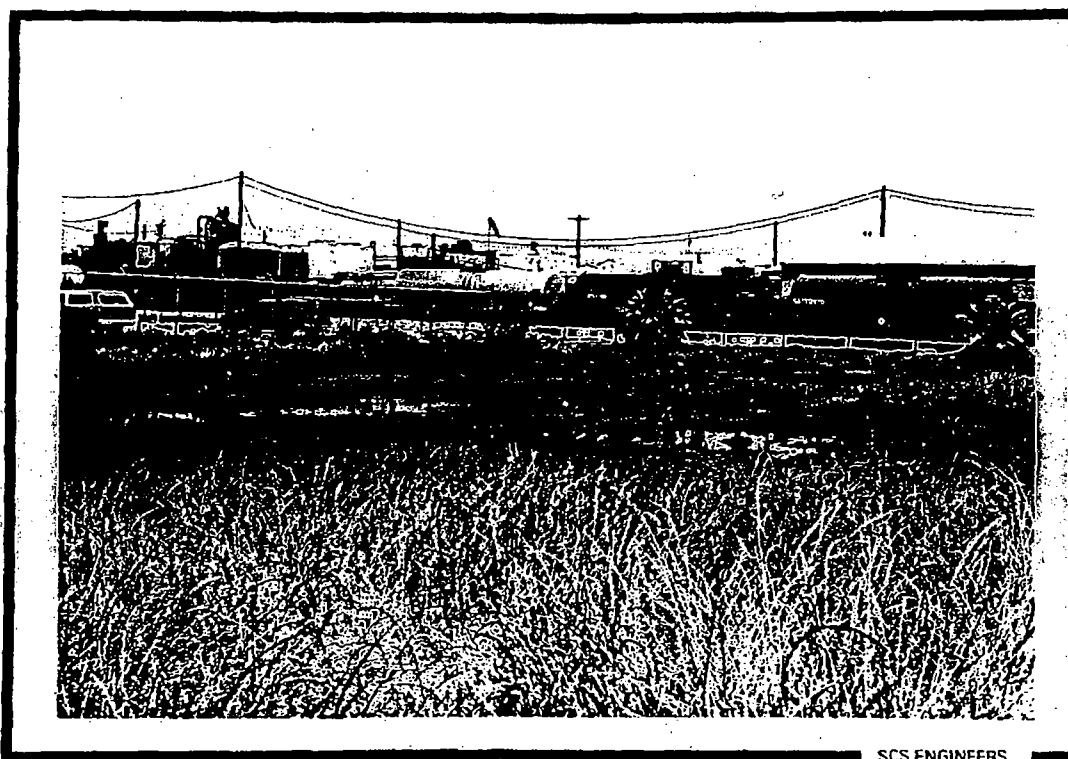
SCS ENGINEERS

Photo 10. View from Northwest Portion of Property Looking South.



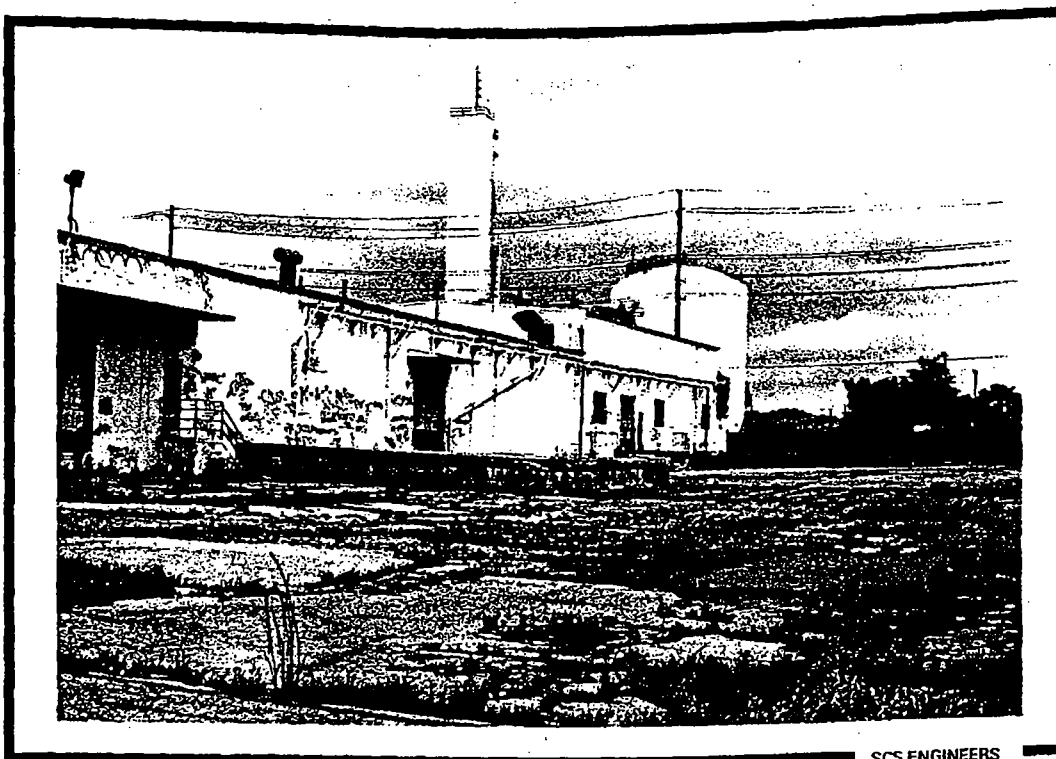
SCS ENGINEERS

Photo 11. View of North End of Warehouse Building with Bermed Area for Above-Ground Storage Units.



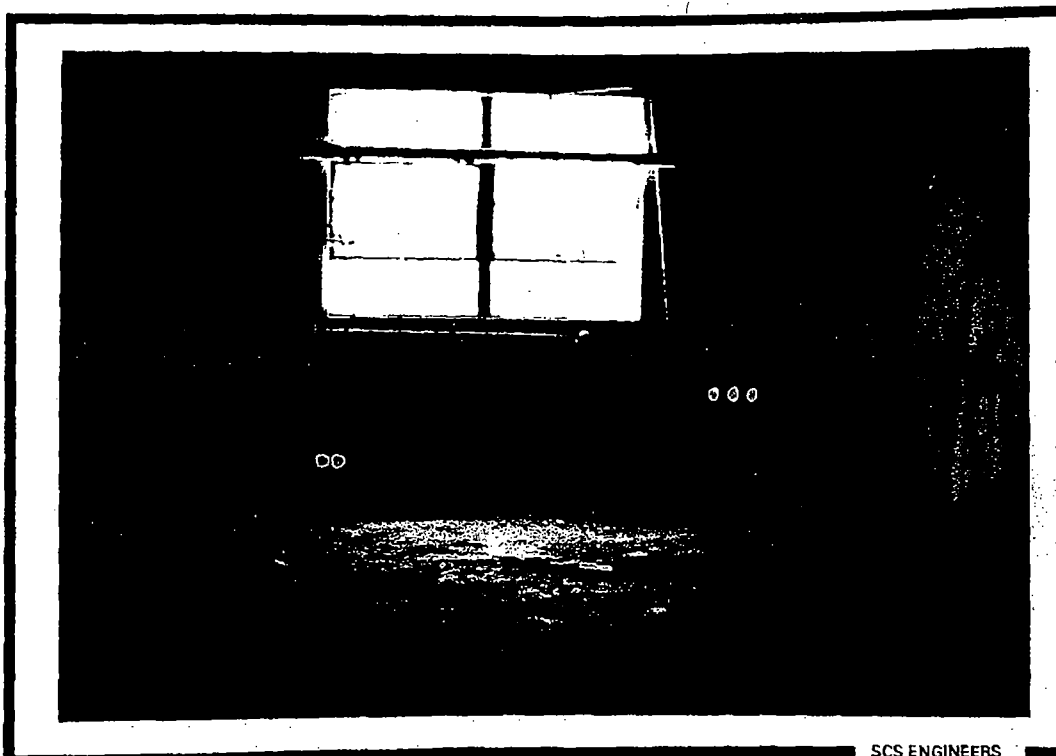
SCS ENGINEERS

Photo 12. View of Stormwater Retention Pond Located in Northwest Corner of Subject Property.



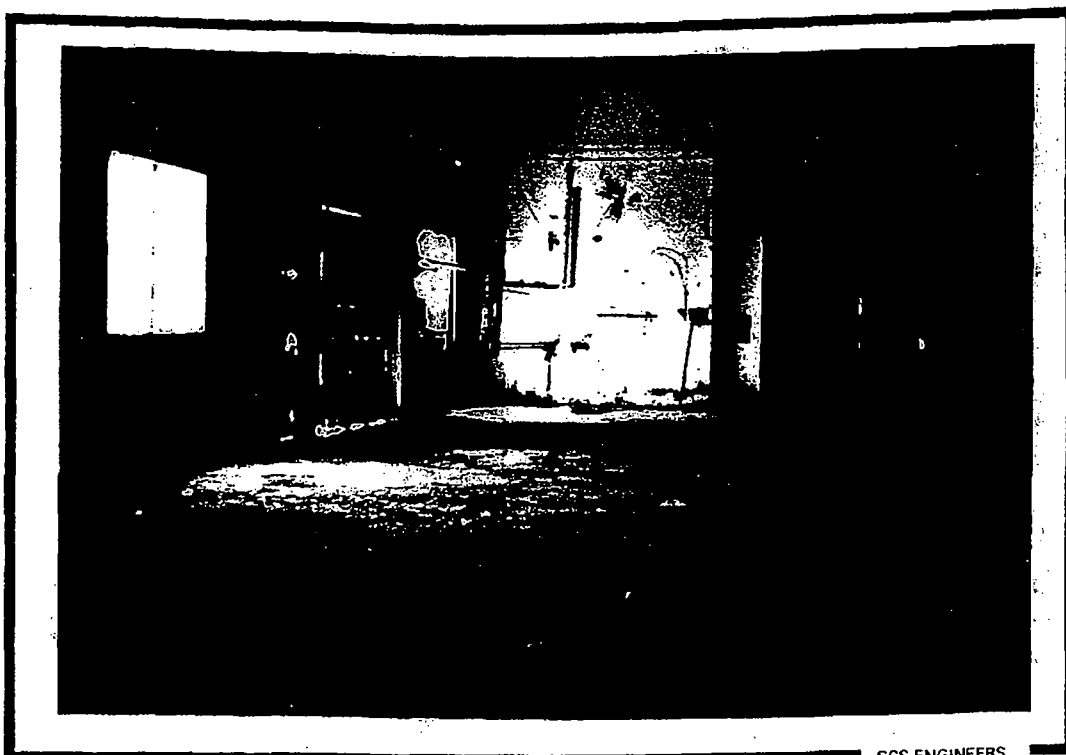
SCS ENGINEERS

Photo 13. View of South End of Warehouse Building from Southwest Portion of Subject Property.



SCS ENGINEERS

Photo 14. View of Monitoring Well Located at Southern End of Warehouse Building.



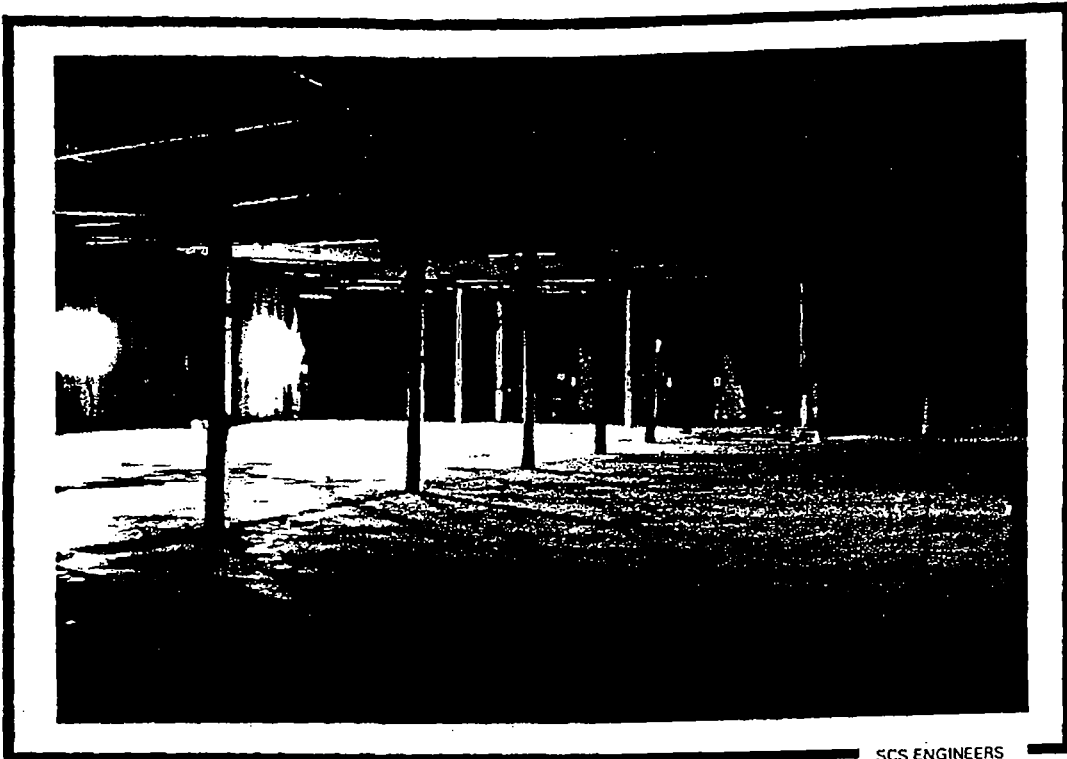
SCS ENGINEERS

Photo 15. Former Processing Area in Southern End of Warehouse Building.



SCS ENGINEERS

Photo 16. Floor Drains Located in Former Processing Area in Southern End of Warehouse.



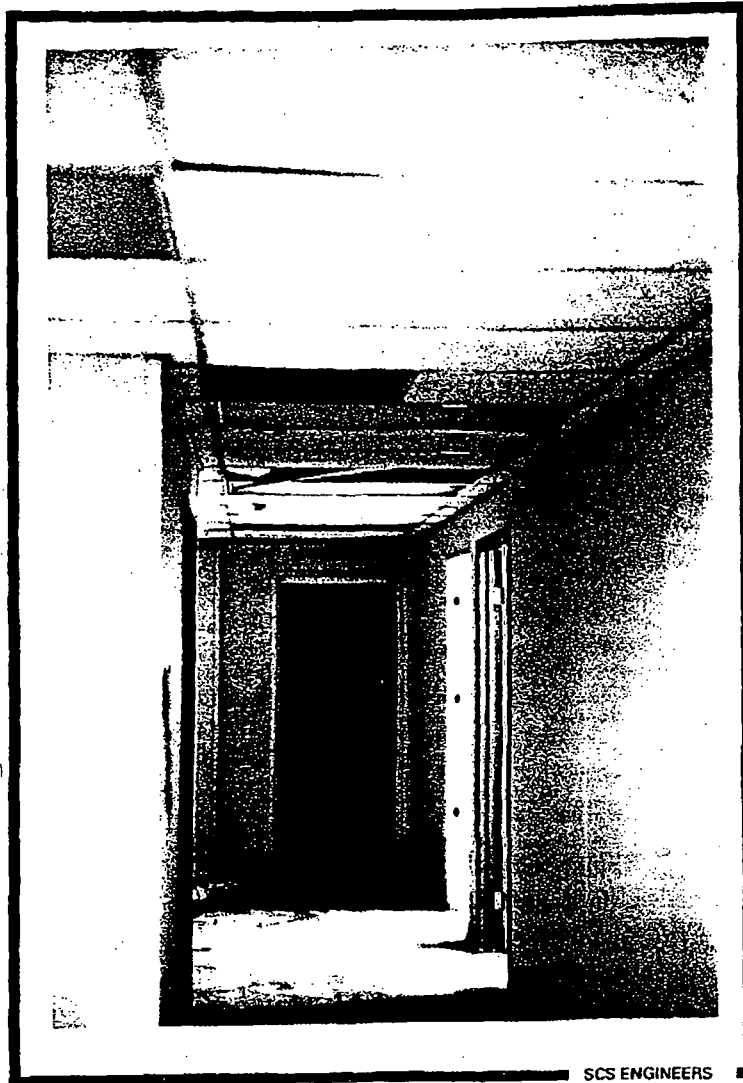
SCS ENGINEERS

Photo 17. Interior View of Warehouse Building Located on Southern End of Property.



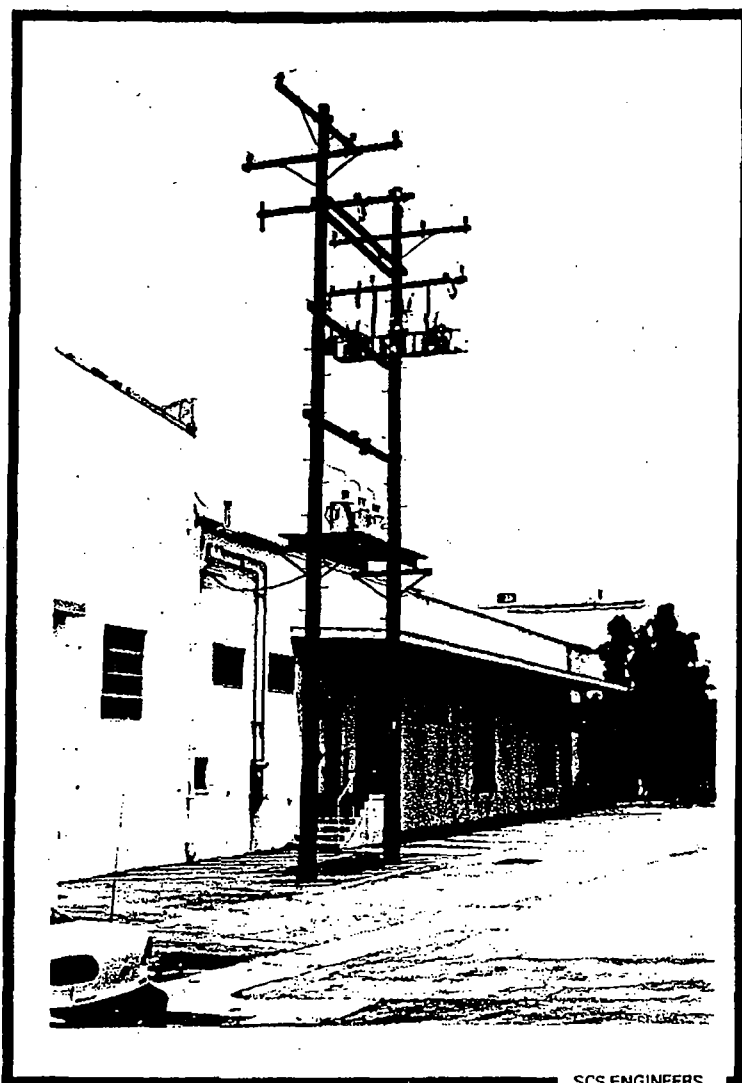
SCS ENGINEERS

Photo 18. Light Brown 9 X 9-Inch VFT in Office Areas.



SCS ENGINEERS

Photo 19. View of Office Hallway with 2 X 4-Foot Suspended Ceiling Tiles.



SCS ENGINEERS

Photo 20. Pole-Mounted Transformers Located in Southeast Portion of Property.

APPENDIX C

ASBESTOS INVESTIGATION REPORT

Exhibit H

 CORPORATION
AMENDED CLOSURE PLAN

PROJECT 50-1601-02

PREPARED FOR
DEPARTMENT OF HEALTH SERVICES
REGION 3
1405 NORTH SAN FERNANDO BOULEVARD, SUITE 3300
BURBANK, CALIFORNIA 91504

PREPARED BY
KLEINFELDER
17100 PIONEER BOULEVARD, SUITE 350
ARTESIA, CALIFORNIA 90701

November 1989

INTRODUCTION

The closure plan described herein is in response to a State Department of Health Services (DHS) Corrective Action Order (Docket HWCH 88/89-017) issued to the respondent, Diversey Wyandotte Corporation (DWC), located at 8921 Dice Road, Santa Fe Springs, California 90670.

In a letter dated January 20, 1989 to Kleinfelder, DWC requested that Kleinfelder prepare a Closure/Sampling Plan and Implementation Schedule for a Permitted Hazardous Waste Storage Facility and Neutralization Tank at the DWC, Plant Site in Santa Fe Springs, California. The closure/sampling plan was submitted in March 1989 for review by DHS. In a letter dated October 11, 1989, DHS requested additional information prior to approval of the closure/sampling plan. This amended plan includes the information requested in the October 11, 1989, letter. The information contained in this report addresses only the aforementioned permitted structures and vessels. Findings and conclusions described in this report are based solely upon materials transmitted to Kleinfelder by DWC. By using its information Kleinfelder neither warrants nor guarantees the accuracy of the data used for those findings and conclusions.

FACILITY LOCATION AND SIZE

Diversey Wyandotte Corporation (DWC) applied to and received from the California State DHS a permit (CAD 046455747) authorizing the continued operation of a hazardous waste storage and treatment facility located at 8921 Dice Road, Santa Fe Springs, Los Angeles County, California. The company manufactured cleaning products containing chromium, as well as acid and alkali based cleaning products at the facility. A site location map is included as Figure 1.

Approximately 275 gallons per month of waste (chromium salts or acid in solution with strong mineral acids) was generated. This waste was collected in polyethylene-lined 55-gallon fiber drums, and then treated to raise the pH to the 4 to 6 range, in a 2,500-gallon stainless steel mixing vessel. After pH adjustment, the waste was transported to an offsite disposal facility by a licensed hazardous waste hauler. The lined fiber drums were stored in a covered, bermed storage area until four or more drums were available to be treated in a batch.

A neutralization and clarification system for the disposal of acids and alkaline wastes was and still is on the site, but because that system was and is regulated by the Los Angeles County Sanitation District, under discharge permit No. 8113, no permit is required from the DHS.

Security at the site was and is provided by a Wells Fargo System, with monthly inspection of sprinkler systems and alarms included by Wells Fargo.

SITE HISTORY

The Santa Fe Springs (SFS) facility was built in 1954 by Wyandotte Chemical Company to replace a Pacific Chemicals plant purchased in 1951. The plant was expanded in 1963 and again in 1967. In or about 1970, BASF Corporation acquired Wyandotte Chemicals, forming BASF Wyandotte Corporation. On April 1, 1980, Diversey Corporation acquired the Chemical Specialties Business of BASF Wyandotte, which included the SFS facility. The plant became part of Diversey Wyandotte when Diversey Wyandotte Corporation was incorporated on April 1, 1981, under Delaware law.

Since 1954, SFS has been used for the production, warehousing, and shipment of chemical specialties products. In mid-1977 an automatic line for bottling antifreeze for the Organic Division of BASF Wyandotte (a separate division from the Chemical Specialties Business of which SFS was a part) was added. About 2,000 gallons per year were bottled. This bottling operation was discontinued about March 31, 1980, when BASF Wyandotte sold the Chemical Specialties business to Diversey Corporation.

The plant is described as a batch blending operation emphasizing materials handling.

Since 1980 the plant has produced cleaning and sanitizing chemical specialties for the institutional, laundry, food processing, dairy, agriculture, metals, and pulp and paper industries. Products produced include:

Institutional: Chemical specialty products for kitchen and housekeeping use in restaurants and for kitchen, housekeeping, and on-premise laundry use in hotels, motels, schools, correctional facilities, nursing homes, and other like institutions.

The products included:

Kitchens: Machine dishwashing powders and liquids, hand dishwashing powders and liquids; machine drying agents, pre-soaks, and delimers.

Housekeeping: Various all-purpose and specialty cleaners and floor finishers.

On-Premise Laundries: Alkalies, detergents, bleaches, softeners, sour, and other related products in either powder or liquid form.

Laundry: Powdered and liquid alkalies, detergents, sour, softeners, bleaches, and related specialties for use in larger institutional and rental laundry facilities. In many cases the same products were sold into the institutional and laundry segments, the difference being container size and size of the laundry.

Food and Dairy: Products for cleaning and sanitizing (bacteria control) in dairy and food processing plants including sanitizers, water conditioners and additives, chain conveyor lubricants, alkalies, chlorinated C.I.P. (cleaning-in-place) cleaners, acid cleaners, manual cleaners, and related specialties.

Dairy Farm: Products for use on dairy farms, primarily for equipment sanitation and herd health, including acid cleaners, pipeline cleaners, chlorinated cleaners, liquid cleaners, iodine disinfectants, chlorine sanitizers, and test sanitizers.

Metal Cleaning Products: Products for the pre-treatment (cleaning) of metals prior to plating. These include acid descalers, maintenance cleaners, soak cleaners, derusters, conversion coatings, deoxidizers and desmutters, electrocleaners, rust inhibitors, paint removers and strippers, aluminum etchants, alkaline cleaners, iron and zinc phosphates, and related specialties. Products containing chromium were produced at SFS and warehoused there.

Pulp and Paper Industry: Products for use in pulp and paper mills, primarily oil and water-based defoamers (during that time period), and related products for end-process cleaning.

In the manufacturing process, various raw materials are blended together or even repackaged under a trade name. The plant follows the chemical formulas developed by Research and Development in manufacturing a product.

In March 1987, DWC sold a portion of the property, which sale did not include the building housing the manufacturing and warehouse facilities.

Hazardous waste operational changes throughout the history of the facility are as follows:

1954-1970

Based on information and belief, liquid acids, alkali, and small amounts of ethyl and isopropyl alcohol were disposed of by injection wells onsite. Solid alkalies from waste products were dissolved in water and mixed with waste acids before disposal to wells. It is believed solids with limited solubility were shipped to landfills. Date of discontinuance of injection wells is unknown.

1975-1980

A wastewater neutralization system was built in 1973. Both off-specification liquid alkalies and powdered non-chlorinated alkaline cleaners were dissolved in water and used to adjust pH of wastewater effluent stream. Technical grade sulfuric acid was purchased to neutralize excess alkalinity.

Some solid chlorinated products, raw materials, and hydrocarbons were shipped offsite for disposal.

1980-1984

Waste stream included:

Waste D007 Solid and liquid chromium waste containing products - believed less than 200 pounds - were stored for offsite disposal.

D001 Liquid containing alcohols and solid oxidizers such as chlorinated organic bleaches - 800 pounds per year.

D002 Alkaline solid and liquid waste - 100,000 pounds per year.

D003 Solid chlorinated compounds - bleaches trichloroisocyanurate and calcium hypochlorite - 1,000 pounds per year.

UO54 Phenolic and crysilic acid wastes - 50 pounds per year.

UO80 Dichloromethane (methylene chloride) - 400 pounds per year.

U154 Methanol and related alcohol - 125 pounds per year.

All wastes except liquid acids and alkalies were sent offsite for disposal.

Liquid acids and alkalies were mixed together if compatible to effect neutralization, and the wastewater was discharged to the POTW.

A hazardous-waste storage permit was issued effective October 1, 1984.

1984-1989

All wastes stored and transported offsite for disposal.

DWC ceased production of products containing chromium early in 1989. These were the products requiring that DWC operate under a hazardous waste storage permit. Since manufacture of these products was discontinued at SFS, DWC has had no need for its permit and can operate as a small-quantity generator.

GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

The Diversey Wyandotte Corporation's Santa Fe Springs facility is located at 8921 Dice Road in section 31 of township 2 south, range 11 west, San Bernardino baseline and principal meridian, in the Santa Fe Springs Plain area of the coastal plain of Los Angeles County, California. The Santa Fe Springs Plain is a low, slightly rolling topographic feature that has been warped by the Santa Fe Springs - Coyote Hills anticlinal system. This plain dips gently both to the northeast, toward Whittier, and to the southwest, toward the Downey Plain, with elevations that ranges between 175 and 200 feet above sea level.

The site is located on upper Pleistocene alluvium of the Lakewood formation. The Lakewood formation unconformably overlies the lower Pleistocene San Pedro Formation, the Pliocene Pico and Repetto Formations, and the Miocene Puente Formation (refer to Figure 4). Based on literature, only the Lakewood and the San Pedro formations underlying the site contain fresh-water-bearing units (DWR Bulletin 104).

Three monitoring wells were installed on the property, then later destroyed, as part of an assessment study in January 1986. Locations of these wells are shown on Figure 2. Geologic boring logs are included in Appendix A. Based on the geologic logs from these wells, the following site specific information has been prepared.

The site is located on surface exposure of the Bellflower Aquiclude, a low permeability portion of the Lakewood Formation. This late Pleistocene aquiclude is approximately 10 to 15 feet thick and consists of clays, silt, silty clays, and sandy clays at the site's location. The Gage aquifer underlies the Bellflower aquiclude to a depth of 30 to 35 feet. Below the Gage, a second aquiclude exists to a depth of 50 feet. This aquiclude separates the Gage from the Hollydale aquifer. The Hollydale aquifer contains the first water beneath the site. Results from drilling by Kleinfelder near the site have indicated that the bottom of this aquifer is approximately 105 feet beneath the surface. The transmissivity of this aquifer is on the order of 40,000 gallons per day per foot beneath the site. Based on an assumed aquifer thickness of 50 feet and an error factor of one order of magnitude, a permeability range of 80 to 8,000 gal/day/ft² can be expected.

The general regional flow of groundwater in the area is in a south to southwest direction. Depth to groundwater is approximately 50 feet beneath the site's surface.

As part of the January 1986 assessment study, 12 soil samples and five water samples were analyzed. The soils were analyzed for pH, phosphate, chloride, ammonia and EPA priority pollutant metals. The water samples were analyzed for general minerals pH, EPA priority pollutant metals, phosphate, chloride, ammonia and purgeable halocarbons (U.S. EPA method 601). The laboratory results for both the soil and groundwater are included in Appendix B.

DESCRIPTION OF OPERATION PRODUCING HAZARDOUS WASTE

This facility manufactured a variety of cleaning and sanitizing products and only a few of these products contain chromic acid. When the manufacturing tanks were washed out, the water that was collected became a "Hazardous Waste". This "waste solution of chromic acid," a corrosive solution containing chromic acid, was collected and stored in 55-gallon drums. This facility accumulated about 5 drums (275 gallons) of this waste chromic acid solution per month.

The Chromic Acid solution was pumped into a 2,500-gallon stainless steel tank and mixed with dilute sodium hydroxide to raise the pH. A sample from the well-mixed solution was then taken and sent to a laboratory to be checked for chromic acid content and pH. All liquid and sludge were then hauled to the nearest TSD facility by Oil Process Company. This procedure was followed whenever a load of waste chromic acid was to be sent to the disposal site. A more detailed discussion is included in Section 4.

All new manufacturing formula were checked to ensure that no new raw materials were introduced into the system which would be considered hazardous, and therefore would need to be included in the waste analysis plan. This check was performed by the plant manager.

DESCRIPTION OF HAZARDOUS WASTE MANAGEMENT UNITS

Storage Shed

Containers used for storage of hazardous waste were poly-lined fiber 55-gallon drums. The hazardous waste drums were stored in an outside shed under a roof. The drums were stored on an asphalt base and were contained in a 9-inch high asphalt berm measuring 10 feet wide by 40 feet long. The volume of this berm was reported to be 2,244 gallons, and the maximum storage capacity of hazardous waste was 4,500 gallons. All drums were stored on wooden pallets which helped prevent any spilled material from coming in contact with undamaged containers until the spilled material could be cleaned up.

Neutralization Tank

The tank used for treating (neutralizing) the hazardous waste at the facility was a 2,500-gallon, 316 stainless steel mixing vessel located in the liquid production area. The tank was 9 feet high, with a diameter of 7 feet, and was supported entirely by a surrounding platform. The tank was installed in 1982, with a life expectancy of 20 years. The drums of hazardous waste were transported from the storage area to the neutralization tank on pallets by plant fork lifts. Once at the tank, the material was pumped from the drums to the mixing tank using an air-driven diaphragm pump and chemically resistive hose.

A limited amount of equipment was used to handle hazardous waste at this facility. Propane powered lift trucks were used to move the hazardous waste to the storage area and from the storage area to the neutralization area. Other equipment used included the neutralization tank, the transfer pump used to transfer the waste from the drums to the tank, and also from the tank to the disposal truck, and the chemically resistant hose also used in both transfers. The locations of the storage shed and neutralization tank are included on Figure 3.

OTHER ENVIRONMENTAL PERMITS AND EXEMPTIONS

The California State Department of Health Services issued the subject Hazardous Waste Facility Permit for the continued operation of the existing facility, and as such the facility was and is exempt from the provisions of the California Environmental Quality Act in accordance with Section 15301, Chapter 3, Title 14, California Administrative Code.

The effluent wastewater stream was and is discharged into the sewer as covered by Los Angeles County Waste Water Discharge Permit (No. 8113)

There are no other hazardous waste management units onsite.

2 FINAL CLOSURE

From review of the manifest and Biennial Hazardous Waste Reports supplied by DWC, the life cycle of the hazardous waste units can be summarized by the following paragraphs.

The effective date of the hazardous waste permit for the hazardous waste facilities units was October 19, 1984. During the operational life of the facilities (February 15, 1982 to October 27, 1987), as calculated from various reports, waste totaling 17,865 gallons was shipped to a TSD facility. The last shipment to a facility occurred in October 27, 1987.

From conversations with the plant manager, the last neutralization tank wash-out was performed in accordance with the operations/closure plan submitted for permit approval, and is described in that plan in Part XIII Closure, Section A - Closure Plan dated September 9, 1983. The tank is currently being used for non hazardous material mixing.

The storage shed was demolished in March 1987 prior to selling a portion of the property on which the shed was located.

From October 27, 1987, DWC ceased to operate the facilities as hazardous waste units.

No sampling of the subsurface was completed when the shed was demolished. To close the facility properly, a sampling plan must be incorporated into the closure activities to document the existence of any soil contaminators. The sampling plan is summarized here and is discussed in detail in Section 6 Soil Sampling.

Three soil borings will be drilled along the centerline of the former location of the shed. Samples will be collected at 1, 3, 5, 10, and 15 feet below ground surface. The samples from 1 and 3 feet will be analyzed for total chromium by EPA method 7190. No groundwater monitoring wells will be installed unless soil samples indicate that the soil is contaminated with soluble chromium concentrations above 5 mg/l.

It is not anticipated that soil contamination has occurred. If small amounts (less than 50 cubic yards) of contaminated soil with soluble chromium concentrations above background concentrations are detected, then the contaminated soil will be removed to a Class I facility. If a volume greater than 50 cubic yards of contaminated soil with soluble chromium concentrations above background concentrations is detected, then a mitigation plan will be submitted to DHS. Based on information obtained during the January 1986 study, it is estimated that the background concentrations of soluble chromium is between 0.05 and 2.7 mg/l.

6 SOIL SAMPLING

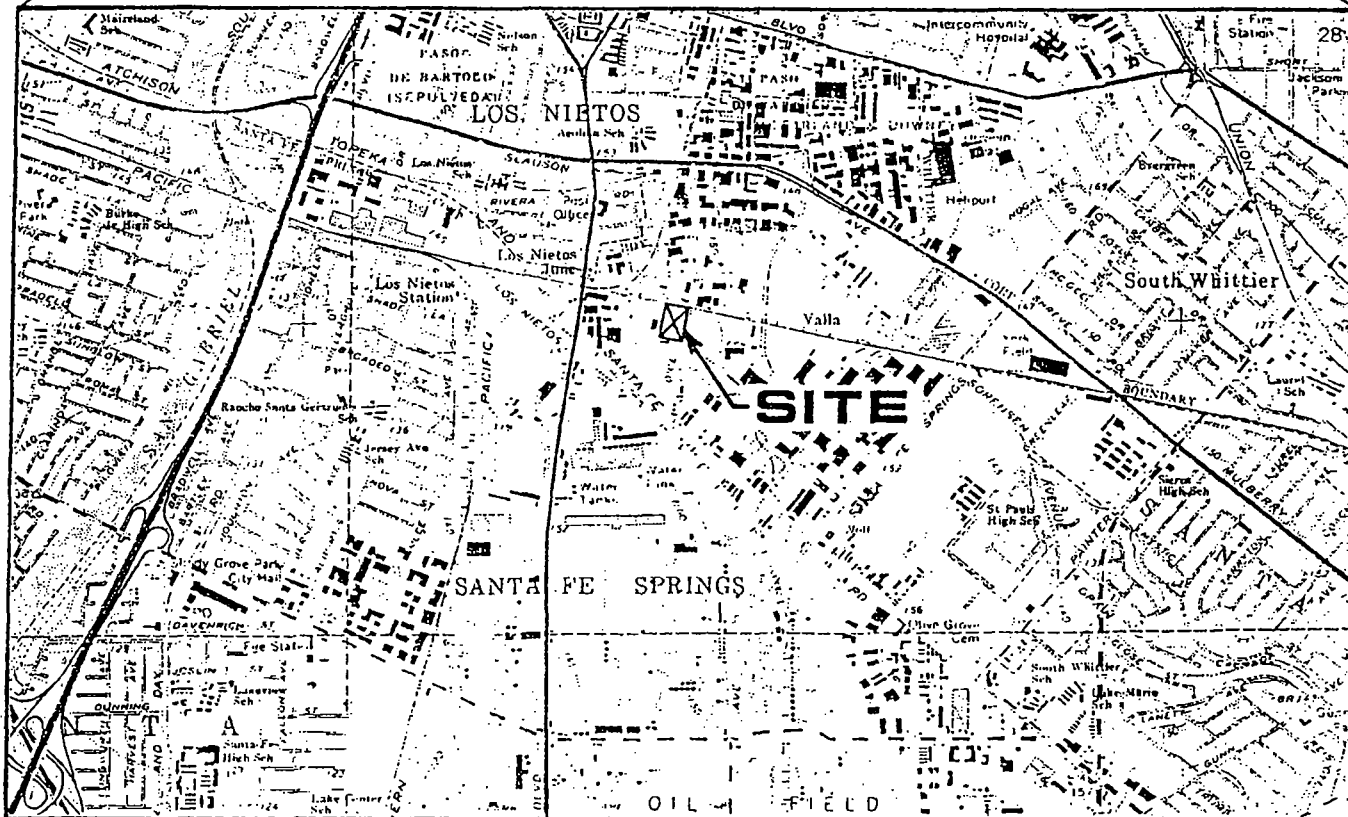
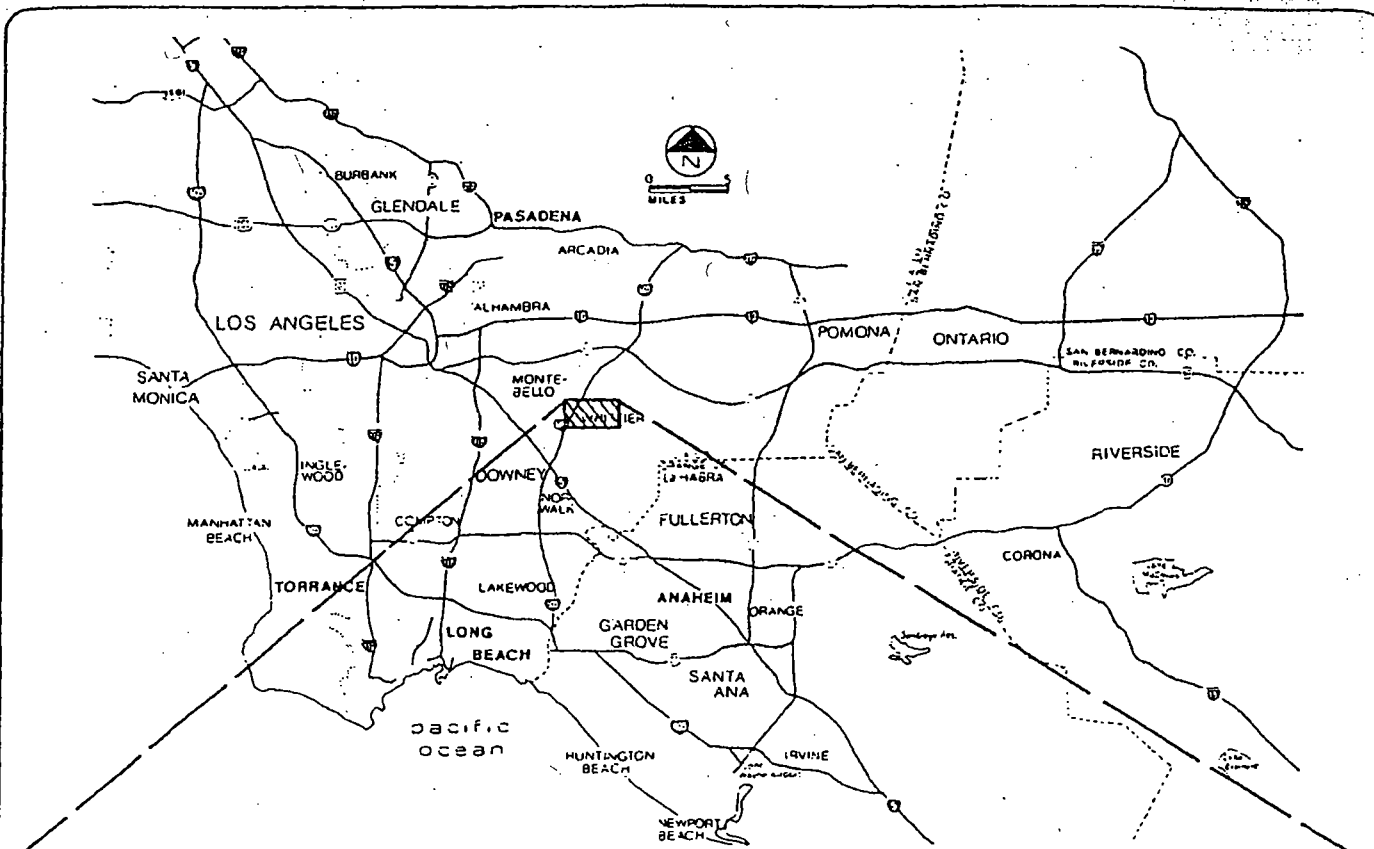
An environmental assessment was performed in January 1986 to evaluate the soil and groundwater quality in the south yard area. Three monitoring wells and six soil borings were sampled as part of this assessment. The wells and borings were destroyed after completion of the study. Analyses of the groundwater indicated that chromium was not detected at the lower detection limit of 0.01 milligrams per liter (mg/l) in all three wells. Analyses indicated that total chromium existed in the soil at concentrations up to 2.9 milligrams per kilogram (mg/kg).

To complete closure of the shed three soil borings will be drilled, each to a depth of 15 feet along the centerline of the shed. In addition, two soil borings will be drilled in the parking lot for evaluation of background concentrations. Soil samples will be collected at 1, 3, 5, 10, and 15-foot depths. The complete soil sampling protocol is included as Appendix C. The samples from 1 and 3 feet will be analyzed for hexavalent chromium by EPA method 7190. If the soluble concentration is above 5 mg/l, then the samples from 5, 10, and 15 feet will be analyzed. If soil with soluble chromium concentrations above 5 mg/l are detected, then a mitigation plan will be submitted for DHS approval.

Groundwater sampling will not be completed as part of the closure of this facility for the following reasons:

- 1) The waste was stored above ground in 55-gallon drums in a diked area.
- 2) Groundwater is approximately 50 feet below ground surface with, a clay layer 20 feet thick separating the groundwater from the surface.
- 3) The waste unit was used for approximately 3 years.

- 4) The only reported spill was leakage from one 55-gallon drum, and was easily contained and cleaned up.
- 5) No chromium was detected in the groundwater in January 1986.



1 INCH equals 2500 FEET

Map reduced from a portion of U.S.G.S. 7.5' topographic series,
Whittier, California quadrangle.

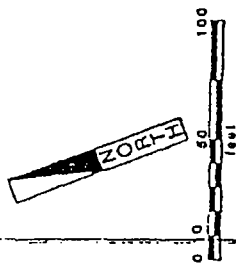
KI KLEINFELDER

DIVERSEY WYANDOTTE CORPORATION
Santa Fe Springs, California

SITE LOCATION MAP

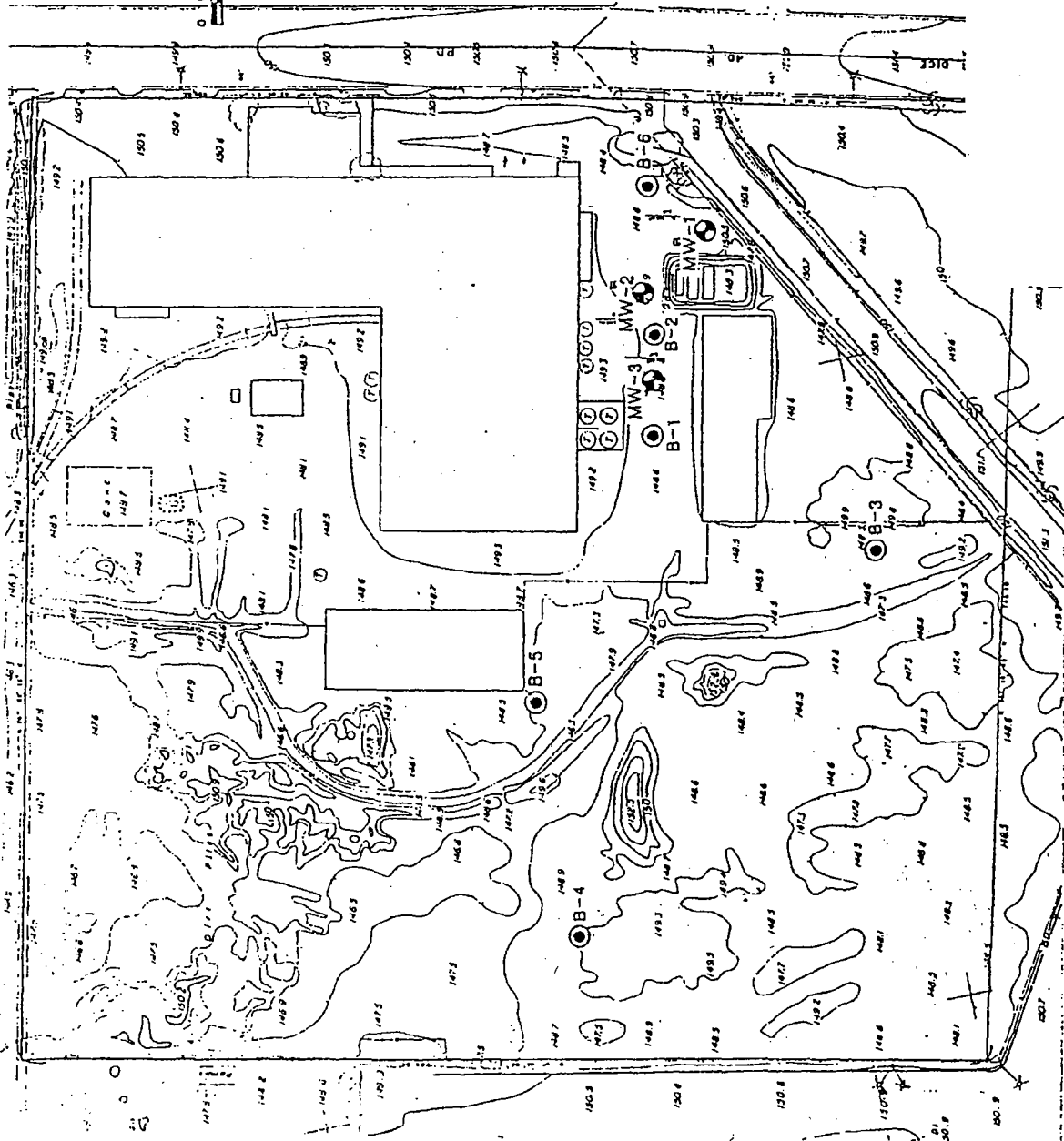
FIGURE

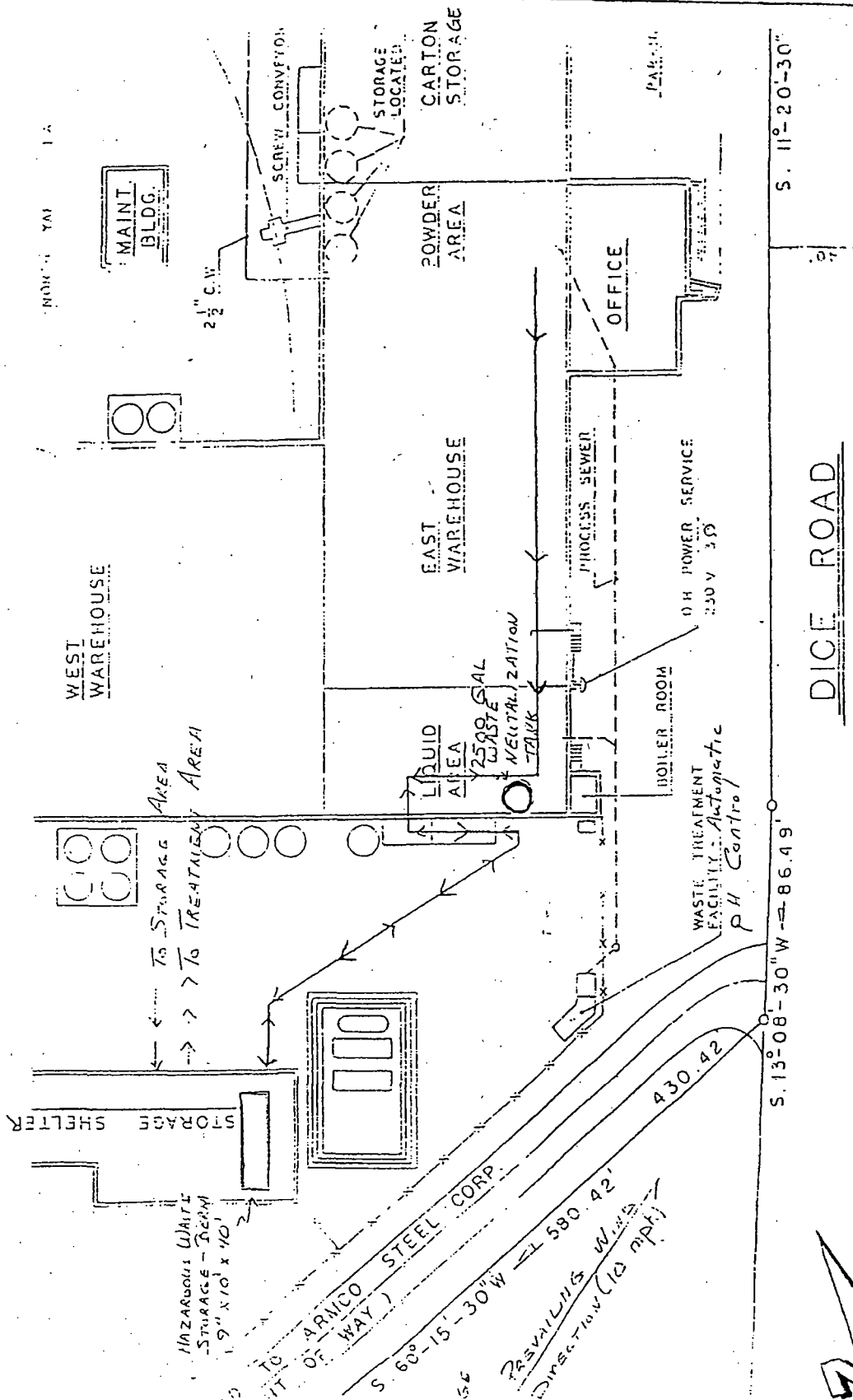
1



EXPLANATION

MW-3 MONITORING WELL
 B-6 SOIL BORING





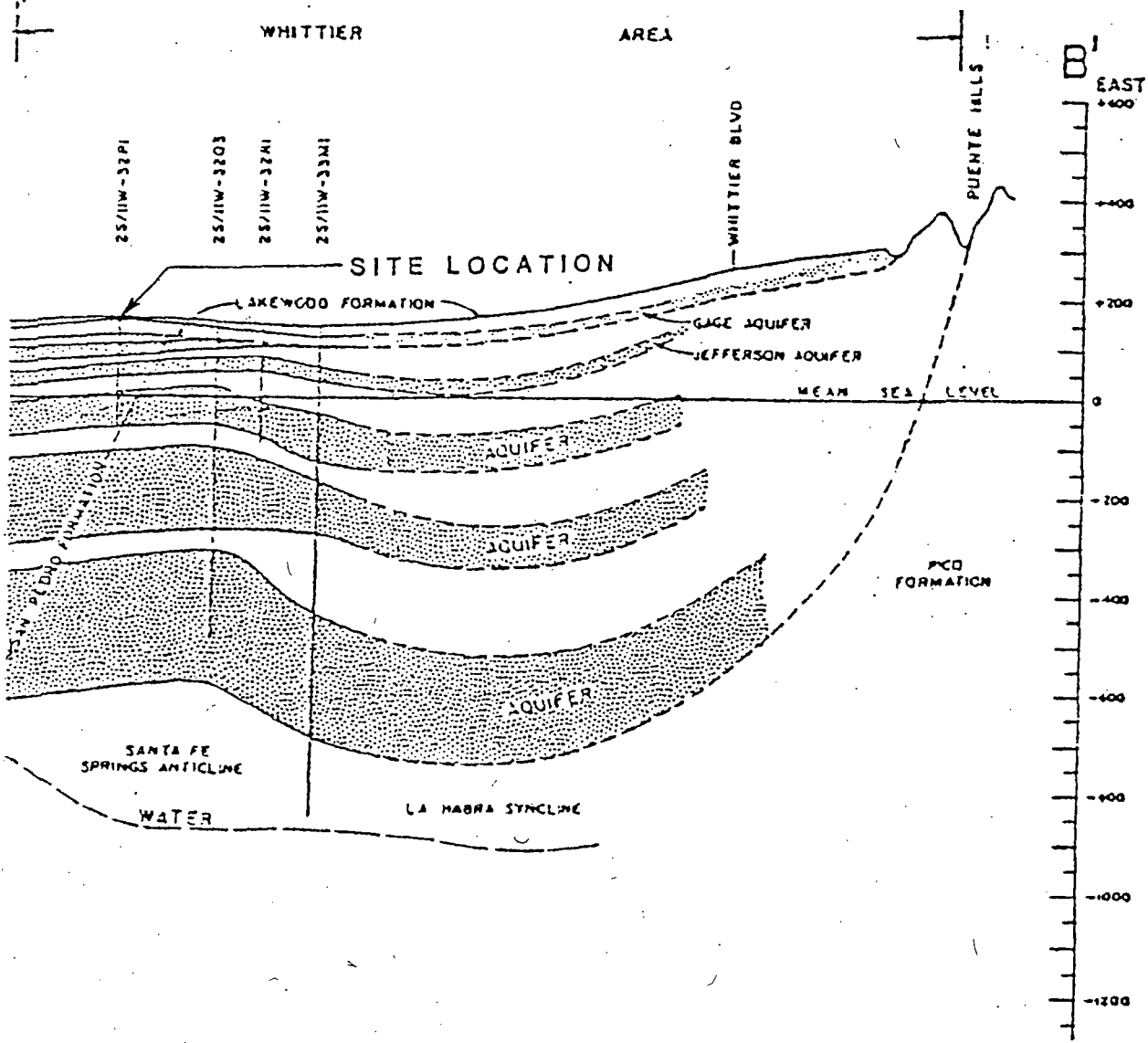
KLEINFELDER

DIVERSEY WYANDOTTE CORPORATION
Santa Fe Springs, California

**SITE PLAN WITH
WASTE UNIT LOCATIONS**

FIGURE

3



SOURCE: Map obtained from Department of Water Resources, Bulletin No. 104.



KLEINFELDER

DIVERSEY WYANDOTTE CORPORATION
Santa Fe Springs, California

REGIONAL CROSS-SECTION

FIGURE

4

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		LTR	DESCRIPTION	MAJOR DIVISIONS		LTR	DESCRIPTION
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	Well-graded gravels or gravel sand mixtures, little or no fines.	FINE GRAINED SOILS	SILTS AND CLAYS LL<50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		GP	Poorly-graded gravels or gravel sand mixture, little or no fines.			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		GM	Silty gravels, gravel-sand-clay mixtures.			OL	Organic silts and organic silt-clays of low plasticity
		GC	Clayey gravels, gravel-sand-clay mixtures.				
	SAND AND SANDY SOILS	SW	Well-graded sands or gravelly sands, little or no fines.	SILTS AND CLAYS LL>50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
		SP	Poorly-graded sands or gravelly sands, little or no fines.		CH	Inorganic clays of high plasticity, fat clays.	
		SM	Silty sands, sand-silt mixtures.		OH	Organic clays of medium to high plasticity.	
		SC	Clayey sands, sand-clay mixtures.		Pt	Peat and other highly organic soils.	
				HIGHLY ORGANIC SOILS			



Standard penetration split spoon sample



Modified California sampler



Shelby tube sample



Water level observed in boring



No recovery

NFWE No free water encountered

NOTE: The lines separating strata on the logs represent approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

H. KLEINFELDER & ASSOCIATES

OTECHNICAL CONSULTANTS • MATERIALS TESTING



BORING LOG LEGEND

REPAIRED BY: DATE:


CHECKED BY: DATE:

PROJECT NO.

PLATE

3

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
	0				Locking Well cap PVC cap
5	67	5	CL	PID 1ppm Clay: Strong brown, 2.5 YR/4/4, very stiff dry-damp	
10	17	10	SP	Sand: medium to fine, 5YR/5/6, yellow red, medium dense, dry Cement grout	
15	57	15	SP	PID 1ppm Sand: fine to medium grained, yellow-red 5YR/5/8, very dense, moist Blank PVC casing	
20	52	20	CL	Clay: with silt, strong brown, 7.5YR/4/6 very stiff, moist	
25	31	25	CL	Clay: dark yellowish-red, 10YR/4/4, very stiff, moist	
30					

J.H. KLEINFELDER & ASSOCIATES 

GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

DIVERSEY-WYANDOTTE
Santa Fe Springs, California

LOG of BORING MW-1

PLATE

4

PREPARED BY: NAP	DATE: 11/86	
CHECKED BY: KD	DATE: 11/86	
		PROJECT NO. Q1073-1

DEPTH (feet)

Blow Count	Sample	USCS	Description	Well Const.
30	47	30	CL	Clay: clay with silt, dark reddish-brown, 5YR/3/4, hard, dry-damp
				Cement grout
35				PVC casing
40	36	40	CL	Clay: yellowish-brown, 10R/5/6 hard, moist
				Bentonite
45				
50	40	50	SW	Sand: fine to coarse grained, reddish-brown 5YR/4/4, very dense, saturated
				Sand pack
55				
60	60	SP		Sand: medium, reddish-brown (5YR/4/4)

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
Santa Fe Springs, California

PLATE

4

LOG of BORING MW-1

PREPARED BY: NAP DATE: 1/86

CHECKED BY: KD DATE: 1/86

PROJECT NO. Q1073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
60					
				Sand pack	
				Slotted PVC casing	
65					
70		70	X SP	Sand: medium, reddish-brown (5YR/4/4)	
75	50+	75	ML/GM	Silt: dark yellowish-brown (10YR/4/4) very dense, wet Tip of sample had fine gravelly silt.	
80				Boring Terminated at 78' Date of Drilling: 11/13/85 Drilling Done By: Ken Durand/ Jeff Friedman	
85					
90					

J.H. KLEINFELDER & ASSOCIATES
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
 Santa Fe Springs, California

PLATE

4

LOG of BORING MW-1

PREPARED BY: NAP DATE: 1/86

CHECKED BY: KD DATE: 1/86


PROJECT NO. Q1073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
0				Locking well cap PVC cap	
			CL	Clay: silt, yellowish-red, 5YR/4/6	
5	56	5	CL	Clay: with silt & fine sand, yellowish-red 5YR/4/6, very stiff, dry	
10	44	10	SP	PID 85ppm slight odor Sand: fine to medium grained, light brown 7.5YR/6/4, dense, dry	
15	60	15	SP	PID 0ppm Sand: medium to coarse grained, light brown, 25Y/6/4, very dense, damp-dry	
20	56	20	ML	Clayey Silt: strong brown, 25YR/3/4 very stiff, moist	
25	51	25	CL	Clay: light olive-brown, 2.5Y/6/6, very stiff, moist	
30					

DEPTH (feet)

Cement grout →

Blank PVC casing →



J.H. KLEINFELDER & ASSOCIATES GEOTECHNICAL CONSULTANTS • MATERIALS TESTING	DIVERSEY-WYANDOTTE Santa Fe Springs, California	PLATE <div style="font-size: 2em; font-weight: bold;">5</div>
PREPARED BY: NAP DATE: 11/86	LOG of BORING MW-2	
CHECKED BY: KD DATE: 11/86	PROJECT NO. Q1073-1	

DEPTH (feet)

Blow Count	Sample	USCS	Description	Well Const.
67	30	CL	Clay: light olive-brown, 2.5Y/6/6, very stiff, moist	
			Cement grout	
			Blank PVC casing	
40	40	SL	Clayey Sand: interbed sand and clay, Sand: reddish, medium grained, Clay: olive-brown, stiff, moist	
			Bentonite	
		CL		
40+	50	SP	Sand: medium to fine grain, yellowish-red, 5YR/5/6, very dense, saturated	
			Sand pack	
			Slotted PVC casing	

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
Santa Fe Springs, California

PLATE

5

LOG of BORING MW-2

PREPARED BY: NAP DATE: 1/86

CHECKED BY: KD DATE: 1/86

PROJECT NO. Q1073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
	60			SP	Sand: medium to coarse sand, saturated
65					
70					
75					
80			SP	Sand: medium to fine grain, brown, 7.5YR/4/2 very dense, saturated Boring Terminated at: 78' Date Of Drilling: 11/12/85 Drilling Done By: Ken Durand	
85					
90					

J.H. KLEINFELDER & ASSOCIATES GEOTECHNICAL CONSULTANTS • MATERIALS TESTING	DIVERSEY-WYANDOTTE Santa Fe Springs, California	PLATE <div style="font-size: 2em; text-align: center;">5</div>
	LOG of BORING MW-2	
PREPARED BY: NAP DATE: 1/86		
CHECKED BY: KD DATE: 1/86	PROJECT NO. Q1073-1	

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
0				Locking Well Cap PVC Cap	
			SC	Sand: fill material	
5	56	5	CL	PID 1ppm Clay: yellowish-brown, 5YR/4/6, some silt, hard, dry	
10	18	10	SP	Sand: medium grained, strong brown, 7.5YR/5/8, medium dense, dry	
				Cement Grout	
15	55	15	SP	Sand: medium to coarse grained, gray, 5YR/5/1, very dense, moist	
				Blank PVC casing	
20	60	20	ML	PID 1ppm, slight odor Silt: clayey silt, olive, 5Y/5/4, hard, moist	
25	86	25	CL	Clay: gray, 2.5Y/5/0, hard, moist, chemical odor	
30					

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
Santa Fe Springs, California

PLATE

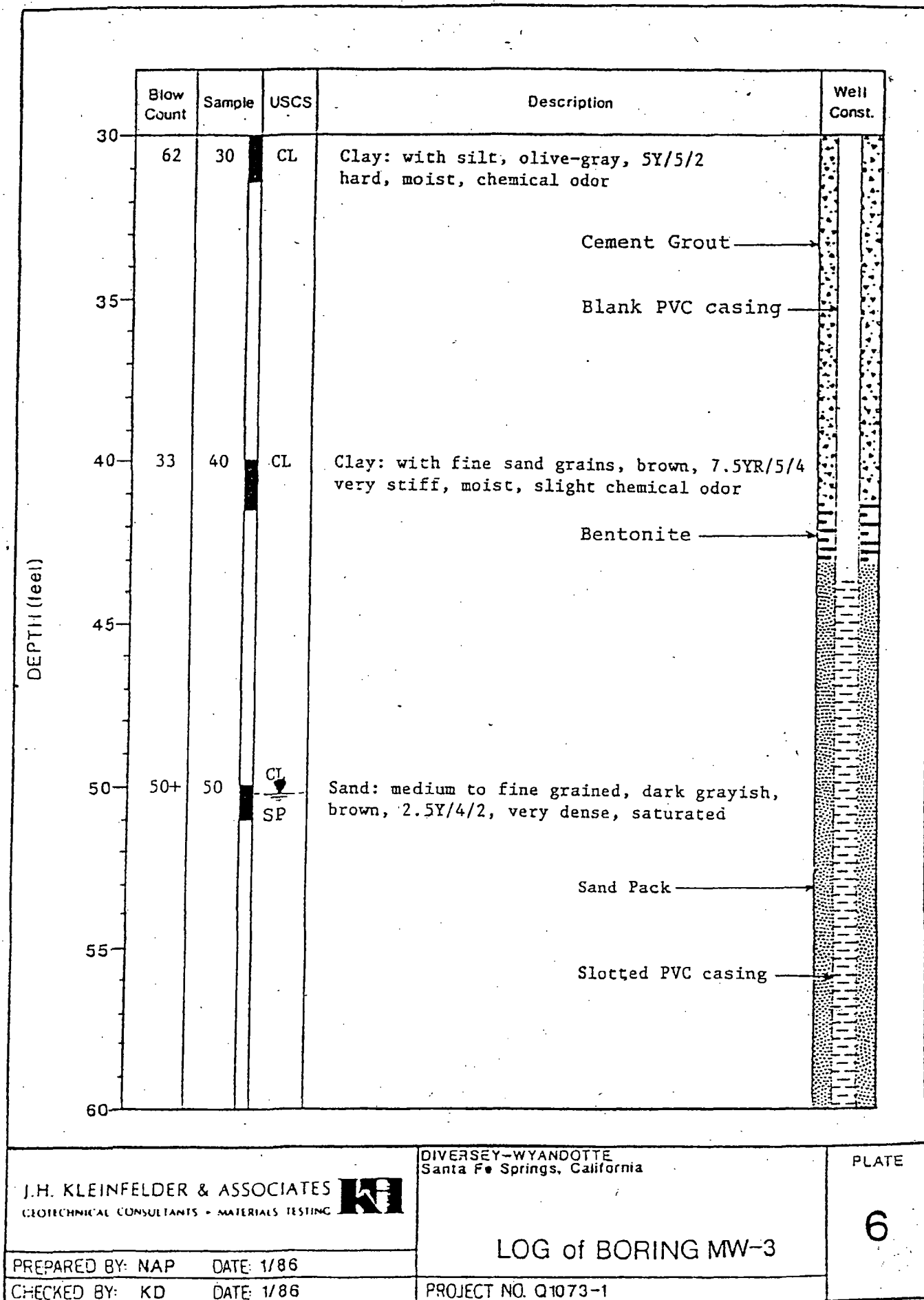
6

LOG of BORING MW-3

PREPARED BY: NAP DATE: 11/86

CHECKED BY: KD DATE: 11/86

PROJECT NO. Q1073-1



DEPTH (feet)

60	Blow Count	Sample	USCS	Description	Well Const.
65					
70					
75			SP	Sand: medium grained, light reddish brown, 5YR/6/4, very dense, saturated	
80				Boring Terminated At: 75'	
				Date of Drilling: 11/14/85	
				Drilling Done by: K. Durand	
85					
90					

Sand Pack

Slotted PVC casing

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
Santa Fe Springs, California

PLATE

6

LOG of BORING MW-3

PREPARED BY: NAP DATE: 1/86

CHECKED BY: KD DATE: 1/86

PROJECT NO. Q1073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
	0				
	13	1	ML	Silt: with fine grained sand, black, 5YR/2.5/1, stiff, damp No recovery	
5	48	5	ML/CL	Silty Clay: reddish brown, 5YR/4/3, hard, moist	
10	34	10	ML	Silt: with fine grained sand, dark gray, 7.5YR/4/0, very stiff, moist	
15					
20	65	20	SP	Sand: coarse sand with pebbles, gray, 2.5Y/5/0 very dense, moist, slight chemical odor	
25					
30					

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

DIVERSEY-WYANDOTTE
 Santa Fe Springs, California

LOG of BORING B-1

PROJECT NO. Q1073-1

PLATE


7

PREPARED BY: NAP DATE: 1/86

CHECKED BY: KD DATE: 1/86

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
	0				
	50+	1	ML	Silt: with fine grained sand, very dark gray, 5YR/3/1, very hard, dry	
	13	3	ML	Silt: with coarse sand, yellowish-red, 5YR/4/4, stiff, moist	
5	30	5	CL	Clay: dark reddish brown, 5YR/3/4, stiff-moist	
10	32	10	SP	Sand: fine to coarse grained, strong brown, 7.5YR/5/6, medium dense, moist	
15					
20	40	20	SP	Sand: medium to coarse, black (2.5Y/2/0) gray (2.5Y/6/0), dense, moist, chemical odor	
25					
30					

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
 Santa Fe Springs, California

PLATE

8

PREPARED BY: NAP DATE: 11/86

CHECKED BY: KD DATE: 11/86

LOG of BORING B-2

PROJECT NO. Q1073-1

DEPTH (feet)

	Blow Count	Sample	USCS	Description	Well Const.
30	45	30	CL	Clay: gray (5Y/5/1), hard, moist, chemical odor	
35				Boring Terminated at: 30' Date of Drilling: 11/15/85 Drilling Done By: Ken Durand	
40					
45					
50					
55					
60					

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
Santa Fe Springs, California

LOG of BORING B-2

PREPARED BY: NAP DATE: 1/86

CHECKED BY: KD DATE: 1/86

PROJECT NO. Q1073-1

PLATE

8

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
0					
	31	1	SP/ML	Silt & Sand: medium and fine grained sand & silt, reddish-brown, 5YR/5/4, medium dense, dry	
	45+	3	ML/SP	Silt & Sand: silt with medium sand with organic matter, light brown, 7.5YR/6/4, very dense, dry	
5	55+	5	CL/ML	Clay & Silt: light brown, 2.5YR/6/4, very hard dry	
10	59	10		No recovery	
15	68	15	SP	Sand: medium to coarse grained sand, reddish-brown, 5YR/5/3, very dense, moist	
20	50+	20	SP	Sand: medium to coarse grained, reddish-brown, 5YR/5/3, very dense, moist	
25					
30					

J.H. KLEINFELDER & ASSOCIATES
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
 Santa Fe Springs, California

PLATE

9

LOG of BORING B-3

PREPARED BY: NAP DATE: 11/86

CHECKED BY: KD DATE: 11/86

PROJECT NO. Q1073-1

DEPTH (feet)

	Blow Count	Sample	USCS	Description	Well Const.
30	38	30	CL	Clay: yellowish-red, 7.5YR/6/6, very stiff, moist	
35				Boring Terminated at: 30' Date of Drilling: 11/15/85 Drilling Done by: Ken Durand	
40					
45					
50					
55					
60					

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
Santa Fe Springs, California

PLATE

9

LOG of BORING B-3

PREPARED BY: NAP DATE: 1/86

CHECKED BY: KD DATE: 1/86

PROJECT NO. Q1073-1

DEPTH (feet)

	Blow Count	Sample	USCS	Description	Well Const.
0					
	52	1	ML	Silt: with fine grained sand, yellowish-brown, 10YR/5/4, hard, dry	
	55+	3	CL	Clay: reddish-yellow, 7.5YR/6/6, hard, dry	
5	50+	5	CL	Clay: with fine sand, reddish-brown, very hard, dry	
10	48	10	CL	Clay: reddish-brown, 5YR/5/4, hard, dry	
15					
20	55+	20	SP	Sand: medium to coarse grained, reddish-yellow 7.5YR/6/6, very dense, damp	
25					
30					

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
Santa Fe Springs, California

PLATE

10

LOG of BORING B-4

PREPARED BY: NAP DATE: 11/86

PROJECT NO. Q1073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
0					
40	40	1	SM	Silty Sand: fine grained sand with silt, strong brown, 7.5YR/5/6, medium dense, dry	
45		3	ML	Silt: silt with fine sand, light reddish-brown 5YR/5/4, hard, dry	
5	90	5	ML	Silt: silt with fine sand, light reddish-brown 5YR/5/4, hard, dry	
10	27	10	SP	Sand: fine sand, light olive brown, 2.5Y/5/4, medium dense, damp	
15					
20	70	20	SP	Sand: medium to fine grained, gray (10YR/6/1), very dense, dry	
25					
30					

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
Santa Fe Springs, California

PLATE

11

LOG of BORING B-5

PREPARED BY: NAP DATE: 11/86

CHECKED BY: KD DATE: 11/86

PROJECT NO. Q1073-1

DEPTH (feet)

	Blow Count	Sample	USCS	Description	Well Const.
30	55	30	CL	Clay: strong brown, 7.5YR/5/6, hard, moist	
35				Boring Terminated At: 30' Date of Drilling: 11/15/85 Drilling Done by: Ken Durand	
40					
45					
50					
55					
60					

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
Santa Fe Springs, California

PLATE

LOG of BORING B-5

11

PREPARED BY: NAP DATE 1/86

PROJECT NO. 01073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
0					
25	1		ML	Silt: silt with fine sand, dark grayish-brown 10YR/4/2, stiff, dry	
63	3		*	No recovery, hard	
5	45+	5	CL	Clay: with fine sand, reddish-brown, 5YR/4/3, very hard, moist	
10	12	10	SP	Sand: fine to medium grained, reddish-yellow, 7.5 YR/6/6, loose, moist	
15					
20	60	20	*	No recovery	
25	12	25	SL	Clayey Sand: medium to fine grained sand with clay, reddish-brown, 5YR/4/3, very dense, moist	
30					

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE
Santa Fe Springs, California

PREPARED BY: NAP DATE: 11/86

LOG of BORING B-6

PROJECT NO. Q1073-1

PLATE

12

Blow Count	Sample	USCS	Description	Well Const.
30	45	30	CL	Clay: pale brown, 10YR/6/3 hard, moist
35				Boring Terminated at: 30' Date of Drilling: 11/15/85 Drilling Done by: Ken Durand
40				
45				
50				
55				
60				

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

DIVERSEY-WYANDOTTE
Santa Fe Springs, California

PREPARED BY: NAP DATE: 1/86

APPENDIX B
LABORATORY RESULTS

TABLE C
TABULATION OF SOIL DATA
EPA METHOD 624 (EXPANDED)
VOLATILE ORGANICS*
(ug/kg)

Boring Depth	MW2 15	MW2 40
<u>COMPOUND</u>		
benzene	ND 500	ND 500
carbon tetrachloride	ND 100	ND 100
chlorobenzene	ND 100	ND 100
1,2-dichloroethane	ND 100	ND 100
1,1,1-trichloroethane	ND 100	ND 100
1,1-dichloroethane	ND 100	ND 100
1,1,2-trichloroethane	ND 100	ND 100
1,1,2,2-tetrachloroethane	ND 100	ND 100
chloroethane	ND 100	ND 100
1,1-dichloroethene	ND 100	ND 100
1,2-trans-dichloroethene	ND 100	ND 100
1,2-dichloroethane	ND 100	ND 100
1,3-dichloropropylene	ND 100	ND 100
ethylbenzene	ND 100	ND 100
methylene chloride	ND 100	ND 100
chloromethane	ND 100	ND 100
bromomethane	ND 100	ND 100
bromoform	ND 100	ND 100
bromodichloromethane	ND 100	ND 100
fluorotrichloromethane	ND 100	ND 100
dichlorodifluoromethane	ND 100	ND 100
chlorodibromomethane	ND 100	ND 100
tetrachloroethene	ND 100	ND 100
toluene	ND 100	ND 100
trichloroethene	ND 100	ND 100
vinyl chloride	ND 100	ND 100

Non-Priority Hazardous Pollutant Substances List Compound

acetone	ND 500	ND 500
2-butanone	ND 500	ND 500
carbon disulfide	ND 200	ND 200
2-hexanone	ND 500	ND 500
4-methyl-2-pentanone	ND 500	ND 500
styrene	ND 200	ND 200
vinyl acetate	ND 1000	ND 1000
total xylenes	ND 200	ND 200

*Methanol Extract

NOTES: ND500 = Not detected at 500 ug/kg

TABLE D
TABULATION OF WATER DATA
(mg/l)

	QC1	MW1	MW2	QC2	MW3	Drinking Water Standards
Arsenic	ND.01	ND.01	ND.01	ND.01	ND.01	0.05
Selenium	ND.01	ND.01	ND.01	ND.01	ND.01	0.01
Mercury	ND.1	ND.1	ND.1	ND.001	ND.001	.002
Silver	ND.01	ND.01	ND.01	ND.01	ND.01	0.05
Barium	ND.3	ND.3	0.36	ND.3	ND.30	1.0
Cadmium	ND.01	ND.01	ND.01	ND.01	ND.01	0.01
Chromium	0.02	ND.01	ND.01	ND.01	ND.01	0.05
Lead	ND.06	ND.06	ND.06	ND.06	ND.06	0.05
Flourine	ND.01	0.36	0.34	ND.01	0.31	--
Nitrate	2.0	27.0	25.2	2.3	4.1	45

NOTES: QC1 = Quality Control Sample Number 1
MW1 = Sample from Monitoring Well number 1
ND.1 = Not detected at .1 mg/l

TABLE E
TABULATION OF WATER DATA

EPA 601
Purgeable Halocarbons
(ug/l)

	<u>MW3</u>	<u>DOHS</u> <u>"Action Level"</u>
methylene chloride	14	40
trichlorofluoromethane	ND1	
1,1-dichloroethene	34	
1,1-dichloroethane	5	
trans-1,2-dichloroethene	ND1	
Chloroform	13	
1,1,2-trichloro-2,2,1-trifluoroethane	ND1	
1,3-dichloroethane	ND1	
1,1,1-trichloroethane	8	200
carbon tetrachloride	ND1	
bromodichloromethane	ND1	
1,2-dichloropropane	3	10
trans-1,3-dichloropropene	ND1	
trichloroethene	90	
dibromochloromethane	ND1	
1,1,2-trichloroethane	ND1	
cis-1,3-dichloropropene	ND1	
bromoform	ND1	
1,1,2,2-tetrachloroethane	8	
tetrachloroethene	9	
chlorobenzene	ND1	

NOTES: ND1 - Not detected at 1 ug/l

Table F
Tabulation of Water Data
(mg/l)

	General Minerals					Secondary Drink Water Standards
	QC 1	MW 1	MW 2	QC 2	MW 3	
cium	1.2	145	130	1.4	130	--
per	ND.1	ND.1	ND.1	ND.1	ND.1	1.0
n	ND.2	ND.2	ND.2	ND.2	0.3	0.3
nesium	ND.1	38	33	ND.1	36	--
ganese	ND.2	0.7	0.6	ND.2	1.8	0.05
ium	3.0	108	115	4.1	123	--
ic	ND.1	0.5	0.4	ND.1	0.5	5.0
al Alkalinity to pH 4.6; mg CaCO ₃ /L	2.5	405	375	2.5	510	--
ioride	ND.1	0.36	0.34	ND.1	0.31	1.4
trate Nitrogen	2.0	27.0	25.2	2.3	4.1	45
loride	240	120	120	30	150	500
rfactants	70	70	50	ND10	55	--
(units)	8.04	7.27	7.31	8.26	7.04	--
nductivity, (mhos/cm)	10	1,300	1,200	10	1,300	1,600
lfate	ND 1	412	458	ND1	386	500
tal Dissolved Solids	295	1,325	1,135	120	1,175	1,000
rdness, (mg CaCO ₃ /L)	3	518	461	3.5	473	--
osphate	7.7	11.3	14.4	ND3	12.0	--

Exhibit I

**GROUNDWATER ASSESSMENT
AND
VAPOR EXTRACTION FEASIBILITY STUDY
DIVERSEY WYANDOTTE CORPORATION
SANTA FE SPRINGS,
CALIFORNIA**

Prepared for:

DIVERSEY WYANDOTTE CORPORATION

Prepared by:

THORNE ENVIRONMENTAL, INC.

DECEMBER 1989

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
1.1 Previous Investigations	1
2.0 PURPOSE AND SCOPE OF SERVICES	1
3.0 INVESTIGATIVE METHODS	2
3.1 Drilling and Sampling	2
3.2 Groundwater Monitoring/Vapor Extraction Well Installation and Design	2
3.3 Groundwater Monitoring Well Development and Sampling	3
3.4 Soil and Groundwater Laboratory Analyses	3
3.5 Vapor Extraction Feasibility Study	3
4.0 FINDINGS - GROUNDWATER ASSESSMENT	4
4.1 Subsurface Conditions	4
4.2 Soil and Groundwater Test Results	4
5.0 DISCUSSION	5
6.0 CONCLUSIONS AND RECOMMENDATIONS	5
6.1 Conclusion	5
6.2 Recommendations	6
7.0 FINDINGS - VAPOR EXTRACTION FEASIBILITY STUDY	6
7.1 Field and Analytical Test Results	6
7.2 Discussion	6
7.3 Recommendations	7
TABLE 1 Soil Test Results	
TABLE 2 Groundwater Test Results	
TABLE 3 Groundwater Monitoring Well Data	
TABLE 4 Vapor Extraction Feasibility Test Results	
FIGURE 1 Vicinity Map	
FIGURE 2 Site Plot Plan	
APPENDIX A Boring Logs	
FIGURE A-1 Key to Log of Borings and Unified Soil Classification System	
PLATE 9 Soil Boring SB-9	
PLATE 11 Soil Boring SB-11	
PLATE 12 Soil Boring SB-12	
APPENDIX B Soil and Groundwater Test Results	
APPENDIX C Vapor Extraction Feasibility Test Results	

1.0 INTRODUCTION

Thorne Environmental, Inc. is pleased to present the results of our groundwater assessment and vapor extraction feasibility study at Diversey Wyandotte Corporation. The subject site is located at 8921 Dice Road in Santa Fe Springs, California, (Figure 1). This project was conducted in accordance with our proposal to Diversey Wyandotte dated October 19, 1989.

1.1 Previous Investigations

In June and September 1989, Thorne Environmental, Inc. conducted two separate subsurface investigations in the vicinity of the concrete sump area. A plot plan of this area is shown on Figure 2. After a shallow soil boring (SB-9) was drilled near the sump in June, two deeper soil borings (SB-11 and SB-12) were drilled in September 1989 to investigate subsurface soil conditions to a depth of approximately 46 1/2 feet below ground surface (bgs).

Tested soil samples obtained from SB-11 closest to the sump contained detected levels of kerosene and several volatile and semi-volatile organic compounds. Because these constituents were present in soil near groundwater, installation of a groundwater monitoring and vapor extraction well was recommended in Thorne's October 1989 report.

Logs of borings SB-9, SB-11 and SB-12 from the two previous investigations are presented in Appendix A (Plates 9, 11 and 12). A log of boring SB-19 (the groundwater monitoring and vapor extraction well) is presented on Plate 19.

2.0 PURPOSE AND SCOPE OF SERVICES

The purpose of installing a combined groundwater monitoring and vapor extraction well was twofold: first, to evaluate if groundwater was impacted by the chemical constituents in the vadose zone beneath the concrete sump; and second, to evaluate soil vapor characteristics during our vapor extraction feasibility study for purposes of designing a vapor extraction system (VES) for soil remediation.

The scope of our investigation involved the following tasks:

- o Drill and install a groundwater monitoring/vapor extraction well to a depth of approximately 65 feet bgs;
- o Develop the new groundwater monitoring well and the three older wells on-site;
- o Sample and analyze groundwater from the four wells for total petroleum hydrocarbons (TPH) and volatile and semi-volatile compounds;

- o Measure and record groundwater levels in the four wells to evaluate groundwater flow direction and gradient across the site;
- o Evaluate groundwater test data;
- o Conduct a vapor extraction feasibility study on the vapor extraction well to evaluate soil vapor characteristics anticipated during soil remediation; and
- o Prepare this report presenting our findings, conclusions, and recommendations.

3.0 INVESTIGATIVE METHODS

3.1 Drilling and Sampling

The groundwater monitoring/vapor extraction well (SB-19) was drilled with a CME-75 truck-mounted hollow stem auger drill rig. The rig used 8-inch diameter auger and drilled to a depth of approximately 69 1/2 feet. All downhole equipment was steam cleaned prior to drilling the well. Soil cuttings from the well were placed in DOT-approved 55-gallon drums. The drums will be disposed at an appropriate landfill.

Soil samples were obtained at five foot intervals from 45 feet to 65 feet bgs for soil identification purposes. Because soils from 0 to 45 feet were sampled while drilling SB-11 in September 1989, no samples were obtained from this interval in SB-19. The samples were collected using a modified Sprague and Henwood split-spoon soil sampler. Sampling equipment was washed in tap water and Alconox solution and was double-rinsed in distilled water prior to sampling each interval. A key to Log of Borings and the Unified Soil Classification System is presented on Figure A-1.

The soil sampler contained three 6-inch long by 2 1/2-inch diameter brass tubes. The soils in the tubes and the cuttings from the well were screened for volatile organic compounds using a Photovac Tip-II photoionization detector (PID). The center tube of each sample was sealed with teflon, fitted with plastic caps, and sealed with tape. Samples were stored in a cooler with blue ice and were delivered to West Coast Analytical Services in Santa Fe Springs, California for chemical testing. Full chain-of-custody protocol was followed during sample delivery.

3.2 Groundwater Monitoring/Vapor Extraction Well Installation and Design

The well was completed using 4-inch I.D. Sch. 40 well casing and 4-inch I.D. 0.020-inch slotted Sch. 40 PVC well screen. Screen was set from approximately 10 feet to 69 1/2 feet bgs while the casing was set from the ground surface to 10 feet bgs. Threaded top and bottom caps were placed on the well casing and screen. The annulus opposite the well screen and the first two feet of well casing was packed with #3 Monterey sand. The remainder of the annulus opposite the well casing was filled

with concrete. The top of the well was covered with a water-tight steel fill-ring set in concrete two inches above ground surface. The edge of the well head was sloped down to the ground surface to provide drainage.

3.3 Groundwater Monitoring Well Development and Sampling

The four monitoring wells were developed using a submersible water pump. Approximately 100 gallons of groundwater was pumped from each well and was placed in DOT-approved 55-gallon drums. During well development, water temperature and electrical conductivity were monitored.

Groundwater samples were obtained from each well using a teflon bailer. The bailer was washed in a tap water and Alconox solution and double rinsed in distilled water between each sample. The sampled water was transferred to sterile 40 ml and 1 liter glass containers with accompanying duplicate samples. QA/QC samples were also taken between each well. The sample containers were filled with water to the top to expel air space and were tightly fitted with teflon-lined caps. Collected water samples were stored in a cooler with blue ice and were delivered to a DHS-certified chemical laboratory for analytical testing. Full chain-of-custody protocol was followed during sample delivery.

3.4 Soil and Groundwater Laboratory Analyses

Selected soil samples were analyzed for TPH using EPA Method 8015. Soil test results are presented in Table 1 and in Appendix B. Soil test results from SB-11 and SB-12, drilled and sampled in September 1989, are also shown in Table 1. Groundwater samples were tested for TPH using EPA Method 8015, volatile organic compounds by EPA Method 624, and for semi-volatile organic compounds by EPA Method 625. Groundwater test results are shown in Table 2 and in Appendix B.

3.5 Vapor Extraction Feasibility Test

A vapor extraction feasibility test was conducted on the vapor extraction well (SB-19) to evaluate the concentration, type and volume of soil vapors beneath the concrete sump area. A 92 cubic feet per minute (cfm) regenerative blower was attached to the top of the well. Soil vapors were extracted at a constant rate of 92 cfm from the well for approximately one hour. Vapor concentrations in parts per million were monitored using a PID. After one hour, approximately 10 liters of vapor were sampled with a SKC air sample tube. Two 10-liter samples were obtained. The sample tubes were then delivered to an analytical laboratory for testing to evaluate concentrations of TPH and volatile organic compounds. Vapor sample test results are presented in Table 4 and Appendix C.

4.0 FINDINGS- GROUNDWATER ASSESSMENT

4.1 Subsurface Conditions

Subsurface conditions at the concrete sump are based on soils encountered in soil boring SB-19. In general, soil types beneath the sump area appear to be uniform. The area is underlain by brown to reddish brown silty fine to medium sand and brown fine sandy silt to a depth of approximately 10 feet bgs. These soils are slightly moist and medium dense in consistency. Underlying the uppermost soils are slightly moist, dense, olive brown fine to coarse sands that extend to a depth of approximately 24 feet bgs. Soils below 24 feet bgs grade into reddish brown clayey to fine sandy silt. These soils extend to about 51 feet. A reddish brown silty clay layer is located from approximately 51 feet to 54 feet bgs. This layer is underlain by brown medium to coarse sand to the maximum depth explored of 69 1/2 feet bgs.

Groundwater was encountered in SB-19 (MW-4) at approximately 52 feet bgs. Table 3 lists the latest groundwater monitoring well data obtained on November 10, 1989. Groundwater flow across the site is directed to the west at a gradient of about 0.5 feet per 100 feet. No free product was observed on the groundwater in any of the wells.

4.2 Soil and Groundwater Test Results

Three soil samples from SB-19 at 50 feet, 55 feet and 60 feet bgs were analyzed for TPH using EPA Method 8015. No detected levels of TPH were present in the samples.

Groundwater samples obtained from MW-1, MW-3 and MW-4 did not contain detectable levels of TPH. The groundwater sample from MW-2 contained 7 milligrams per liter (mg/l)* of weathered gasoline.

As shown on Table 2, all groundwater samples contained several volatile organic and halogenated organic compounds at the part per billion level. Groundwater samples from MW-1 and MW-4 also contained one to two semi-volatile organic compounds at the part per billion level.

* One mg/l is approximately equal to one part per million (ppm)

5.0 DISCUSSION

Soil test results from the previous investigation in September 1989 showed that kerosene and several semi-volatile organic compounds were present in soils beneath the concrete sump from approximately 5 to 45 feet bgs. These results along with those of this study also indicated that kerosene had concentrated primarily in the top portion of the silt and clay layer located from about 45 feet to 54 feet bgs. This relatively impermeable layer has inhibited the migration of kerosene to the groundwater located at 54 feet bgs. This is supported by the groundwater test results. No TPH as kerosene were detected in any of the groundwater samples from the four wells.

The volatile organic compounds detected in the groundwater are halogenated solvents such as tetrachloroethylene, trichloroethylene, and 1,2-dichloropropane. Halogenated solvents are not presently used, stored or disposed on the site according to plant personnel.

The majority of the volatile organic compounds detected in the four wells are above California Department of Health Services (DOHS) action levels**, as shown in Table 2. No action levels exist for the semi-volatile organic compounds found in the groundwater. These compounds at these low concentrations are usually not regulated by the DOHS or the Regional Water Quality Control Board (RWQCB).

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

Based on field and certified analytical data, the following conclusions can be made:

- o The kerosene in the vadose zone beneath the concrete sump appears to be restricted to the soils above 45 feet bgs. Most of the high concentration of kerosene was contained in relatively lower permeable soils above the groundwater level.
- o The subject property is located in a heavily industrialized area. Groundwater quality in the first aquifer beneath this area has been degraded by years of industrial activity. Detected constituents in the groundwater beneath the site may be a part of the background groundwater quality in the area. Halogenated solvent concentrations above 0.005 mg/l have been detected in groundwater from wells located in Santa Fe Springs.¹

** The DOHS action level for groundwater is a concentration above which there is cause for concern and possible groundwater remediation.

¹ Metropolitan Water District, 1988, Groundwater Quality and Its Impact on Water Supply in the Metropolitan Water District Service Area, Report No. 969.

- o Diversey Wyandotte does not use or store halogenated solvents in its manufacture of industrial cleaning agents. Therefore, there is no evidence to suggest that the halogenated organic compounds present in groundwater beneath the site originated from a spill or leak on-site.

6.2 Recommendations

Thorne Environmental, Inc. recommends installing an off-site, upgradient groundwater monitoring well to monitor upgradient, or background, groundwater quality. This evaluation would also confirm whether the detected halogenated organic compounds originated from off-site or from on-site activities.

7.0 FINDINGS- VAPOR EXTRACTION FEASIBILITY STUDY

7.1 Field and Analytical Test Results

The purpose of this study was to determine the feasibility of remediating the vadose zone beneath the concrete sump using a Vapor Extraction System (VES). During vacuum purging of MW-4 with a 92 cfm regenerative blower, steady state vapor concentrations of the extracted vapors were monitored using a PID. The vapor concentrations are reported as isobutylene in parts per million. (The PID is calibrated to isobutylene (C_4) at 100 parts per million). Vapor concentrations during the field test ranged from 407 to 516 parts per million as isobutylene. These concentrations steadily increased over a period of one hour during vapor extraction, indicating development of the formation.

A manometer was used to measure vacuum pressure in inches of water in the well during the test. Approximately 10 inches of water pressure was attained in MW-4 during vapor extraction.

Analytical tests on two vapor samples obtained from MW-4 indicated that 860 and 920 milligrams per cubic meter (mg/m^3) as kerosene were detected. Aromatic volatile organic compounds (benzene, toluene, ethylbenzene and xylene) were nondetect at analytical detection limits (Table 4).

7.2 Discussion

The vapor concentrations detected in the well during field and analytical testing are relatively low compared to those detected in the soil samples because kerosene vapors have a relatively low volatility. Non detect levels of volatile aromatic organic compounds in the vapor samples indicates kerosene as the primary vapor constituent in the vadose zone.

The increasing concentration of vapors detected during the field test suggests the full lateral extent of kerosene vapors in the vadose zone may not have been reached by the regenerative blower. A constant vapor concentration with time generally indicates the extent of the vapor plume has been reached.

Because of the relatively permeable soil conditions in the vadose zone, there was very little resistance to vapor flow during vapor extraction with the regenerative blower. This was indicated by the relatively low vacuum reading of 10 inches of water in the well during vapor extraction. These permeable soils should transmit vapors readily and thus are suited for remediation using a VES. After formation development, higher extraction flow rates and concentration levels can be anticipated.

7.3 Recommendations

Thorne Environmental, Inc recommends first removing the concrete sump and all its contents to eliminate the potential source of kerosene in the vadose zone.

A VES is recommended for soil remediation. The VES will consist of a 206 cfm regenerative blower for vapor extraction. Extracted vapors will be contained in carbon absorption canisters. The vapors in canisters will be incinerated offsite. The carbon will be regenerated offsite and can be used again.

Operation of the VES with carbon absorption canisters is easily permitted through the California Department of Health Services under Permit by Rule of the California Administrative Code, Title 22, Section 66392 (d).

Based on kerosene vapor concentrations from the feasibility test, an estimated amount of kerosene in the vadose zone, and a fixed vapor extraction rate, it is estimated that soil remediation will last approximately 6 months. This will require a continuous operation of a VES during this period. A proposal outlining our VES design calculations and remediation costs will follow under separate cover for your review.

We trust this report meets your current needs. Please contact us at (714) 693-1818 if you have any questions.

Sincerely,

THORNE ENVIRONMENTAL, INC.



Richard F. Reimers
Project Geologist



Richard J. Zipp, R.G., C.E.G.
Principal Hydrogeologist

TABLE 1
Soil Test Results

EPA METHOD 8015 (mg/kg)
all fractions to 10 ppm

Sample No. & Depth	Gasoline	Diesel Fuel	Kerosene	Mineral Spirits	C ₁₆ -C ₂₀ Hydrocar- bons	Detection Limit
SB-11 @ 5	ND	ND	ND	ND	ND	10
@10	ND	ND	30	ND	ND	10
@15	ND	ND	870	ND	ND	10
@20	ND	ND	3300	ND	ND	10
@25	ND	ND	3400	ND	ND	10
@30	ND	ND	2800	ND	ND	10
@35	ND	ND	480	ND	ND	10
@40	ND	ND	1500	ND	ND	10
@45	ND	ND	11000	ND	490	10
SB-12 @ 5	ND	ND	ND	ND	530	10
@15	ND	ND	ND	ND	ND	10
@25	ND	ND	ND	ND	ND	10
@30	ND	ND	ND	ND	ND	10
SB-19 @50	ND	ND	ND	ND	ND	10
@55	ND	ND	ND	ND	ND	10
@60	ND	ND	ND	ND	ND	10

ND = Not Detected

TABLE 2
Groundwater Test Results

Monitoring Well	Gasoline	EPA METHOD 8015 (mg/l)			
		Mineral Spirits	Kerosene	Diesel Fuel	Heavy Hydrocarbons
MW-1	ND	ND	ND	ND	ND
MW-2	7	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND
MW-2 (field blank)	ND	ND	ND	ND	ND
MW-4 (field blank)	ND	ND	ND	ND	ND
Detection Limit	0.5	0.5	0.5	0.5	5.0

ND = Not Detected

Exhibit J



ENVIRONMENTAL STRATEGIES CORPORATION

101 Metro Drive • Suite 650 • San Jose, California 95110 • (408) 453-6100 • Fax (408) 453-0496

July 15, 1997

Mr. Jim Ross
Site Cleanup Unit Chief
California Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Re: Former Diversey Corp. Facility - Santa Fe Springs, California

Dear Mr. Ross:

On behalf of Rathon Corp., formerly known as Diversey Corp., Environmental Strategies Corporation (ESC) has prepared this letter outlining remedial action activities undertaken by Rathon at its former manufacturing facility located at 8921 Dice Road, Santa Fe Springs, California (Figure 1). ESC was retained by Rathon Corp. to perform environmental investigations and implement a cleanup program to remediate soils impacted with kerosene at the referenced site.

This letter contains a brief review of previous investigations at the site, a description of the remedial activities voluntarily implemented by Rathon (which are currently in operation) and summarizes known groundwater issues. Following your review of this correspondence, we would like to set up a meeting to discuss our remediation efforts and the necessary steps for obtaining regulatory closure.

Background

From 1953 until 1979, BASF operated at the Santa Fe Springs site manufacturing industrial detergent cleaners. From 1979 until 1992, Diversey Corp. operated at the site and also manufactured industrial cleaning products. The facility has been closed since that time. Kerosene was formerly used at the site as a feedstock for the detergent manufacturing process and was stored at the site in both underground and aboveground tanks. The kerosene was pumped from the storage tanks and transported via pipelines to the manufacturing building. Analytical data collected from previous investigations suggests that the soil and groundwater beneath a former concrete sump area outside the southern wall of the facility were impacted with kerosene.

Previous Investigations

1985 through 1986: Preliminary Assessment

J.H. Kleinfelder and Associates (Kleinfelder) performed a preliminary assessment of the site in 1985, which included the installation of two-inch diameter groundwater monitoring wells (MW-1, MW-2, and MW-3) (Figure 2). Available reports did not contain chemical analytical data from the initial groundwater sampling.

May 1989: Report of Kerosene Pipeline Leak

A leak in an underground kerosene pipeline was reported in May 1989 during excavation of the containment berm for the aboveground kerosene storage tank. This discovery prompted further subsurface investigations, as described below, to determine the extent of impacted soil.

June 1989: Phase I Assessment

In June 1989, Thorne Environmental, Inc. (Thorne) drilled nine exploratory borings (SB-1 through SB-9) to depths of approximately 25 feet in the vicinity of three (former) aboveground storage tanks and several underground pipelines at the project site. Maximum total petroleum hydrocarbon (TPH) concentrations as kerosene were detected at a depth of approximately 5 feet (4,900 mg/kg) in boring SB-9, adjacent to a concrete sump area through which pipelines entered the facility warehouse. TPH concentrations as kerosene were not detected in the samples analyzed from shallow soil borings SB-1 through SB-8.

September 1989: Phase II Assessment

Based upon the findings of the initial assessment, Thorne conducted a second investigation to further characterize the vertical and horizontal extent of impacted soils in the vicinity of the concrete sump area. In September 1989, two additional borings (SB-11 and SB-12) were drilled in the vicinity of the concrete sump to a depth of 46.5 feet. TPH concentrations (11,000 mg/kg) were detected in SB-11 at a depth of 45 feet. TPH was not detected in SB-12, approximately 10 feet south of the concrete sump area.

December 1989: Phase III Assessment

In December 1989, Thorne installed a combination groundwater monitoring/vapor extraction well (SB-19) to determine if groundwater beneath the subject site had been impacted by kerosene, and to perform a vapor extraction feasibility study. In addition to sampling and developing SB-19, Thorne developed and sampled the three existing groundwater monitoring wells (MW-1 through MW-3) which were installed in 1985. TPH concentrations as kerosene were not detected in soil samples collected at depths of approximately 50, 55, and 60 feet, or in the four groundwater samples collected. Thus, it was concluded that kerosene had not migrated vertically to the groundwater table.

Groundwater was encountered during the installation of MW-4 (SB-19) at a depth of 54.35 feet below the ground surface (bgs). Groundwater depths measured in the three other site wells (MW-1 through MW-3) ranged between 53.59 feet bgs and 54.00 feet bgs on November 10, 1989.

Based on the results of the feasibility study, Thorne recommended vapor extraction for remediation of the kerosene impacted soil at the site. Thorne also prepared and Diversey submitted a workplan for soil excavation in the vicinity of the aboveground tank farm (this workplan did not include sump area) to the Los Angeles County Department of Health Services (LACDHS) in December 1989.

December 20, 1989: LACDHS Approval of Soil Remediation Workplan

The LACDHS approved the soil excavation workplan for the excavation of soils in the vicinity of the former aboveground storage tanks (Enclosure A).

November 15 and 16, 1990: Excavation of Kerosene-Impacted Soils in the Vicinity of the Former Aboveground Storage Tanks

Under the workplan approved by the LACDHS, approximately 390 cubic yards of soil were removed from beneath the former aboveground storage tank berm area. The soil was stockpiled at the site and transported for proper disposal at a permitted facility in January 1991.

March 16, 1991: Phase IV Assessment (Dry Sump Area)

Diversey retained a new consultant, EMCON, who installed three exploratory soil borings (EW-1 through EW-3) to more accurately define the vertical and areal extent of the kerosene-impacted soils in the vicinity of the dry sump. The borings were drilled on March 16 and March 19, 1991 to depths of approximately 46 feet. Borings EW-1 and EW-2 were drilled inside the storage warehouse (the warehouse sits on an elevation of approximately 5 feet above the ground surface) and boring EW-3 was drilled outside in the loading dock area (See Figure 1). Upon boring termination, borings EW-1 and EW-2 were converted to two-inch-diameter vadose-zone monitoring wells. Boring EW-3 was converted to a four-inch-diameter vadose-zone monitoring well.

TPH (as kerosene) concentrations of 150, 7.5, and 660 mg/kg were detected in three of the samples analyzed from boring EW-3 at depths of 5, 15, and 20 feet, respectively. TPH was not detected (<1 mg/kg) in samples collected below a depth of 40 feet in borings EW-1 through EW-3.

Based on this assessment, EMCON recommended that a vapor extraction system be designed and implemented for the kerosene-impacted soil beneath the dry sump area.

Voluntary Cleanup Agreement

On June 2, 1994, Diversey entered into a voluntary cleanup agreement with the DTSC and on June 29, 1994, a meeting was held among representatives of the DTSC, Diversey, and EMCON to discuss requirements for the completion of a Workplan for remediating the kerosene impacted soil. EMCON prepared a Workplan that was submitted to DTSC in August 1995.

During the implementation of a portion of the Workplan in June 1995, EMCON found that the depth to groundwater beneath the site had risen considerably from approximately 55 feet below the ground surface (bgs) to 32 feet bgs. Due to the change in groundwater conditions, the Workplan was not fully implemented.

ESC Investigation and Remediation

In 1996, Diversey went through a significant restructuring and disposition of assets and subsequently changed its name to Rathon Corp.

In September, 1996, Rathon voluntarily implemented a program to remediate the soils impacted with kerosene.

Due to the lack of data regarding groundwater quality and water levels and to obtain a current assessment of the site, ESC collected groundwater samples and measured water levels from MW-2, MW-3, and MW-4 in July 1996. ESC was unable to locate MW-1 which may have been paved over. Groundwater samples were collected on July 25, 1996, and analyzed for TPH as kerosene, volatile organic compounds (VOCs), and polynuclear aromatic hydrocarbons (PAHs). The laboratory analytical results indicated that low levels of VOCs were present in wells MW-2 through MW-4 at concentrations exceeding the State of California Maximum Contaminant Levels (MCLs). As discussed below, the VOC levels have been determined to be from offsite sources. MW-4 contained free floating product that was determined to be kerosene.

The groundwater analytical data collected by ESC indicated that there are no PAHs in the three wells MW-2, MW-3, and MW-4; EMCON's sampling detected two PAHs at very low levels in MW-4. Kerosene has not been detected in wells MW-2 and MW-3 by Thorne, EMCON, or ESC. The data suggest that the kerosene contamination found in the are of MW-4 has not migrated to any extent. If the kerosene source had migrated, wells MW-2 and MW-3 (downgradient wells) would contain kerosene and they do not.

Upon completion of the ESC investigation, ESC recommended using the existing well network to implement a soil vapor extraction (SVE) system supplemented with in-situ chemical oxidation using hydrogen peroxide.

On April 9, 1997, Rathon authorized ESC to commence operation of an SVE system at the site for kerosene remediation. The SVE system consists of a catalytic oxidation unit operating at an approximate flow rate of 112.5 SCFM as of May 13, 1997. The most current data from the SVE remediation system showed influent vapor stream hydrocarbon concentrations as high as 538 ppm

and, as of May 13, 1997, over 80 pounds of hydrocarbons had been removed by the system. Approximately 20,000 gallons of groundwater have also been extracted from MW-4 and treated by granular activated carbon. To date, there is no floating product in well MW-4. Therefore, the kerosene levels have begun to be reduced in accordance with the system plan.

Groundwater Issues

Groundwater samples collected in 1989 and 1996 contained several chlorinated organic compounds at levels exceeding their maximum contaminant levels (MCLs). The Rathon facility is located in a heavily industrialized area and detected constituents may be more representative of the regional water quality and not related to activities at the Diversey site. Based on discussions with plant personnel, Thorne reported in 1989 that halogenated solvents were not used, stored, or disposed of onsite at the time of the study.

The VOC concentrations found at the site do not indicate a source area near the wells and appear to confirm that the VOCs have migrated beneath the former site from an upgradient source or sources.

In order to develop additional information concerning offsite impacts, ESC performed a regulatory database search and file review. The database search and file review identified several facilities within a one mile radius of the site that contain or formerly contained underground storage tanks or have handled or released hazardous chemicals. Of these sites, the ones of most note are those located north of the former Diversey plant. The Cal Western Paint Corporation and Western Screw Products, both on Slauson Avenue, are noted as having releases of "unspecified" and "halogenated" solvents. Both these sites are located hydraulically upgradient from the Diversey site. ESC was also able to obtain information from a file review at the RWQCB for the Pilot Chemical Company located north of the site at 11756 Burke Street in Santa Fe Springs, California. This site is of interest because of its location hydraulically upgradient from the site and the environmental investigative work currently being performed.

The groundwater beneath the Pilot Chemical site is contaminated with VOCs. On May 17, 1996, Pilot Chemical Company submitted a Field Investigation Workplan to the RWQCB. The workplan addresses potential source areas contaminated with 1,2-dichloroethane (1,2-DCA) and trichloroethene (TCE). Information from the file review was not available to determine if the workplan was implemented or if the results from the investigation were completed. The file review indicted that Pilot Chemical Company is planning an investigation to determine if upgradient sources of VOCs are migrating onto their property.

Pilot Chemical Company is also listed on the Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS); Leaking Underground Storage Tank (LUST); CORTESE: Identified Hazardous Waste and Substance Sites (CORTESE); Emergency Response Notification System (ERNS); Toxic Chemical Release Inventory System (TRIS); and underground storage tank/aboveground storage tank (UST/AST) databases. Under LUST, Pilot Chemical has had leaks of diesel to the groundwater.

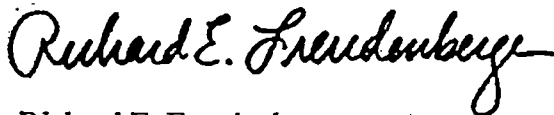
Parker Hannifin Corporation, located northeast of the subject site, is listed on TRIS for a release of 1,1,1-trichloroethane.

Based on data to date and ESC's review of document sources, releases from the Pilot Chemical Company, Parker Hannifin Corporation, Western Screw Products, or Cal Western Paint Corp. appear to have adversely affected the condition of groundwater beneath the former Diversey site. Thus, ESC is not recommending any direct action to address the VOC contamination in the groundwater beneath the site.

The property is currently for sale and negotiations with a prospective buyer are proceeding. It appears likely that the property will be redeveloped for a use other than chemical manufacturing. In order to facilitate the sale of the property and develop a plan to complete remedial activities at the site, we believe it would be very helpful to meet with the RWQCB to discuss our remediation goals and a schedule for obtaining regulatory closure for the site. Therefore, we will call to arrange such a meeting following your receipt of this letter.

Please call if you have any questions or need additional information.

Sincerely yours,



Richard E. Freudenberger
Senior Vice President

REF:bbb:bl
2583a.doc

cc: Chris Bovaird, Rathon Corporation

Exhibit K



ENVIRONMENTAL STRATEGIES CORPORATION

101 Metro Drive • Suite 650 • San Jose, California 95110 • (408) 453-6100 • FAX (408) 453-0496

1. gave verbal approval to proceed 9/23

September 23, 1997

Ms. Jenny M. Au
Los Angeles Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, CA 91754

Re: Workplan for Additional Environmental Investigation
Former Diversey Corp. Facility, Santa Fe Springs, California

Per our meeting on September 17, 1997 and at the request of the Los Angeles Regional Water Quality Control Board (RWQCB), an additional investigation will be conducted at the referenced site. The investigation will consist of a soil gas survey to evaluate potential sources for chlorinated volatile organic compounds (VOCs) in soils at the site and the sampling of existing groundwater monitoring wells to continue to evaluate the extent of VOCs in groundwater. The proposed work is described below.

Soil Gas Survey

It is anticipated that approximately 20 soil gas samples will be collected from two depths at 10 sampling locations (Figure 1). The first vapor samples will be collected in the vicinity of the former concrete sump where kerosene releases to the subsurface had occurred in the past. The sampling grid will expand to the south in the direction of groundwater flow and will cover the areas thought to be associated with the former "seepage pits". If VOC levels diminish with increasing distance from the former sump, the soil gas survey will be completed as depicted in Figure 1. If VOC concentrations increase with distance from the former sump area, or if isolated areas of relatively high VOC concentrations ("hot spots") are discovered, the sampling grid will be expanded as necessary to adequately delineate the extent of vapor-phase VOCs in the subsurface.

All work will be performed under ESC supervision. At each location, a shallow vapor sample will be collected at a depth of five feet below ground surface (bgs) and a second sample will be collected from a depth of 15 feet bgs or until probe refusal to evaluate the vertical distribution of VOCs in soil vapor. The samples will be collected at each location as follows. First, the concrete floor or pavement will be penetrated using the sampling rig or a concrete corer, if necessary. A hardened steel probe will then be driven into the soil to the desired depth using a truck-mounted hydraulic cylinder and percussion hammer unit. Soil vapor samples will be collected by applying a vacuum to disposable polypropylene tubing inserted into the probe. A sufficient amount of air will be withdrawn from the probe before sample collection to ensure that the vapor sample is representative of subsurface conditions. The sample will be collected from a sampling port connected to the polypropylene tubing with a syringe and the vapor sample will be immediately transferred to the onsite gas chromatograph (GC) for analysis. After sample collection, the probe will be removed, the probe hole will be filled with bentonite, and the concrete surface will be patched. No soil cuttings or other wastes will be generated using this method. All non-disposable sampling equipment will be properly decontaminated after each sample is collected.

The soil gas samples will be analyzed in an onsite mobile laboratory using a GC-electron capture device, or equivalent, for VOCs and total petroleum hydrocarbon (TPH) as kerosene using EPA Methods 8021 and modified 8015 respectively. Appropriate Quality Assurance/Quality Control procedures will be followed throughout the sampling and analysis process. All soil gas sampling, analysis, and reporting will be conducted in accordance with the RWQCB Interim Guidance protocols for active soil gas investigations dated March 14, 1996.

Groundwater Sampling

One round of groundwater samples will be collected from each of the seven monitoring wells at the former Diversey site: MW-2 through MW-4 and EW-1 through EW-4. Before initiating the well sampling activities, the depth to water and well depth will be measured for each monitoring well using an electronic water level indicator. A minimum of three well volumes of groundwater will be purged from each well using a decontaminated bailer. Field measurements of groundwater pH, conductivity, and temperature will be taken during purging activities to ensure that groundwater representative of formation conditions is present in the well before sampling. If a well goes dry before purging the necessary volume of water, the well will be allowed to recharge before a groundwater sample is collected.

Groundwater samples will be collected from each well with disposable bailers after the well is purged and stabilized. One duplicate sample will be collected during the sampling round and submitted to the laboratory for analysis. Personnel using sampling equipment will wear polyvinyl chloride surgical gloves or nitrile gloves during sampling and will change gloves between wells to prevent potential cross contamination. The samples will be collected in precleaned sample bottles provided by the laboratory. No headspace will be allowed in the VOC sample bottles to minimize the possibility of volatilization of organics. The samples will be shipped to a California-certified laboratory in coolers containing ice to maintain a temperature below 4° Celsius.

All groundwater samples will be analyzed for VOCs by EPA Method 8260, total petroleum hydrocarbons as kerosene by modified EPA Method 8015, surfactants (MBAS) by EPA method 425.1, pH by EPA method 9040, total phosphates by EPA method 365, and chlorides by EPA Method 9250.

In addition, the monitoring wells will be surveyed by a licensed surveyor so that the groundwater flow direction can be verified. Elevations will be measured to an accuracy of 0.01 foot; horizontal coordinates will be measured to an accuracy of 0.1 foot. The surveyor will clearly mark and label the reference point on the well casings.

We would like to begin this work as soon as possible. Please call if you have any questions or need additional information.

Sincerely,



Richard E. Freudenberger
Senior Vice President

REF:jcc
2267.doc

cc: Chris Bovaird, Rathon Corp.
James Dragna, Esq., McCutchen, Doyle, Brown & Enerson

To: JR/File
Fr: JA
Date: 9/17/97

RE: FORMER DIVERSEY CORP. - 8921 DICE ROAD, SANTA FE SPRINGS.

On the above date, staff met with the site representatives, ESC, and the consultant for the buyer, ESE.

The site is a former cleaning product manufacturing facility. The areas of concern at the site include ASTs, USTs, a sump, a HW storage area, and several seepage pits operated in the 50s. The HW storage area was closed under DTSC's oversight. MW 3 is located in the general area of the seepage pits. ESC claims that kerosene is the only contaminant of concern at the site and is detected in the ASTs, USTs, and the sump area.

Sampling data indicates that the soil has been impacted with TPH and the gw contains TPH and chlorinated VOCs. MW-4 contains free product with a thickness of approximately 1 foot.

Remediation includes a SVE system for soil and bailing free product out of MW-4. The SVE system has been operating for the last 5 months and has removed approximately 600 pounds of TPH. Recent vapor samples show that the vapor concentrations have reached asymptotic levels. Groundwater sample from MW-4 contains 2 ppm of TPH and 0.5 ppb of benzene.

ESC claims that chlorinated VOCs detected in the gw is from an off-site source. However, the soil at the site has not been tested for VOCs. Also, chemicals used at the site in the manufacturing process were stored in powder forms.

ESC proposed to do the followings:

1. Collect confirmation samples in the TPH impacted area.
2. Collect soil samples outside the radius of influence of the SVE system and analyze for VOCs.
3. Collect samples from all on-site MWs and analyze for VOCs, TPH, chloride, and phosphate

A workplan will be submitted for our review and approval.

20,000 gallons of water have been extracted from the ground and stored in a baker tank on site. ESC wants to discharge this water which has been tested and contains nondetectable concentrations of contaminants. JA will check w/ NPDES to see what is needed.

Exhibit L



ENVIRONMENTAL STRATEGIES CORPORATION

226 Airport Parkway • Suite 630 • San Jose, California 95110 • (408) 453-6100 • Fax (408) 453-0496

RECEIVED

98 MAR 30 AM 9:15

CALIFORNIA REGIONAL WATER
QUALITY CONTROL BOARD
LOS ANGELES REGION

March 27, 1998

Ms. Jenny Au
California Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, CA 91754

Re: Submittal of Additional Information Requested by the Regional Water Quality Control Board for Former Diversey Corp. Facility, 8921 Dice Road Santa Fe Springs, California

Dear Jenny:

At the request of the Regional Water Quality Control Board (RWQCB) and on behalf of Rathon Corp. (formerly known as Diversey Corp.) Environmental Strategies Corporation (ESC) conducted a search for documents in an effort to locate information describing any past environmental assessments for the referenced facility. In addition, ESC performed a file review at the Department of Toxic Substances Control Region III (DTSC) to determine if operations at the adjacent Phibro-Tech Incorporated (PTI) facility may have impacted groundwater beneath the former Diversey Corp. facility.

Prior assessment of the former Diversey site

To determine if an environmental assessment was performed at the Diversey building, ESC contacted former Diversey employees and consultants who previously performed work for Diversey in an effort to locate documentation related to Phase I Environmental Assessments that focused primarily on the main building at the former Diversey facility. To date, ESC has not found documentation of any past environmental assessment for the main building. However, a site assessment report (copy enclosed), dated May 7, 1991, was prepared by Emcon on behalf of the former Diversey Corp. in response to a kerosene pipeline leak (the area currently undergoing voluntary cleanup).

Also, a former hazardous waste storage area was located on the southern portion of the former Diversey Corp. facility. In March 1987, the former hazardous waste storage area was relocated to the drum warehouse, northwest of the former area. Both areas were addressed and a closure report was prepared by Kleinfelder, Inc. (see copy of enclosed September 1991 report). On

November 22, 1991, the former hazardous waste storage areas (see enclosed figure and March 17, 1992 letter) were certifiably closed by the DTSC. On July 8, 1994, DTSC issued a memorandum (copy enclosed) confirming the closure of Diversey as a RCRA- regulated hazardous waste management facility.

Preview of information related to PTI

ESC recently reviewed PTI files at the DTSC to determine if groundwater quality beneath the former Diversey Corp. facility may have been adversely affected by PTI operations. Several investigation reports indicate that chlorinated volatile organic compounds (VOCs) were released on the PTI property and are currently affecting groundwater quality beneath their site and the former Diversey site. The basis for this determination is found in the following reports available at the DTSC:

- [*Current Conditions Report, RCRA Facility Investigation, Southern California Chemical*], June 8, 1990 by Camp Dresser & McKee
- [*Statement of Basis for Phibro-Tech, Inc. A.K.A. Entech Recovery, Inc. 8851 Dice Road Santa Fe Springs, California*] November 9, 1994, Department of Toxic Substances Control, Region III
- [*October 1997 Quarterly Sampling Report, Phibro-Tech, Inc.,*] December 21, 1997 by Camp Dresser & McKee

It appears that soils located at a former impoundment at the PTI facility contained elevated levels of metals, PCBs, petroleum hydrocarbons, chlorides, and VOCs. On November 1994, DTSC determined that PTI is responsible for, at a minimum, cadmium, chromium and portions of the VOC contaminants found in the groundwater beneath the PTI facility. It is not clear if PTI has implemented remedial activities; however, PTI currently performs quarterly groundwater monitoring sampling.

Based on a telephone conversation with DTSC, PTI was performing investigative activities pursuant to and Administrative Order on Consent (Consent Order) executed on December 8, 1988, by US EPA Region IX, under the Resource Conservation and Recovery Act (RCRA). However, the DTSC Region III has assumed regulatory jurisdiction for the PTI facility and has issued a permit modification for corrective action. We understand that, to date, PTI has refused to perform corrective action.

Groundwater gradient beneath the PTI property flows in a south-southwesterly direction; the former Diversey Corp facility is located downgradient of the adjacent PTI facility. Based on the information provided, it appears that PTI site operations have potentially impacted groundwater quality beneath the former Diversey site.

**Index For Tanks On Site Drawing
Santa Fe Springs - Dice Road**

Liquid Storage Tank #1 - Sodium Hydroxide
Liquid Storage Tank #2 - Sodium Hydroxide
Liquid Storage Tank #3 - Fatty Acid
Liquid Storage Tank #4 - Fatty Acid
Liquid Storage Tank #5 - Waste Water Tank
Liquid Storage Tank #6 - Phosphoric Acid
Liquid Storage Tank #7 - Waste Water Tank
Liquid Storage Tank #8 - Waste Water Tank
Liquid Storage Tank #9 - Plurafact
Liquid Storage Tank #10 - Plurafact
Liquid Storage Tank #11 - Tergitol/Igepal NP-9
Liquid Storage Tank #12 - Tergitol/Igepal NP-9
Liquid Storage Tank #13 - Tergitol/Igepal NP-9
Liquid Storage Tank #14 - Tergitol/Igepal NP-9
Powder Storage Tank #15 - Sodium Tripolyphosphate
Powder Storage Tank #16 - Soda Ash
Powder Storage Tank #17 - Soda Ash
Powder Storage Tank #18 - Caustic Soda Beads

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

(REGION 3)

1405 N. SAN FERNANDO BOULEVARD, SUITE 300

BURBANK, CA 91504

(818) 567-3000



March 17, 1992

Mr. Donald E. Bossow
Director - Health Safety and Environment
Diversey Wyandotte Corporation
1532 Biddle Avenue
Wyandotte, Michigan 48192

Dear Mr. Bossow:

HAZARDOUS WASTE TREATMENT AND STORAGE FACILITY CLOSURE CERTIFICATION
ACKNOWLEDGEMENT AT DIVERSEY WYANDOTTE FACILITY, SANTA FE SPRINGS, EPA ID #
CAD046455747

The Department of Toxic Substances Control (DTSC) has received the owner's closure certification dated November 22, 1991, and the engineer's closure certification dated October 1, 1991. The certifications state that two container storage areas and the 2,500 gallon treatment tank in your facility have been closed in accordance with the approved closure plan. This letter is to inform you that the Department now considers the hazardous waste management units discussed in the "Closure Report" dated September 1991 officially closed as of November 22, 1991.

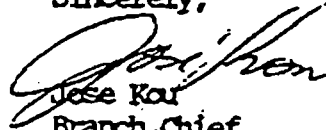
Pursuant to Section 66264.143 of Title 22, Division 4.5 of the California Code of Regulations, the Diversey Wyandotte facility at 8921 Dice Road, Santa Fe Springs, California is released from the requirement to maintain financial assurance for closure of the above-referenced units. This acknowledgment and release is based on the assumption that the information submitted in the certifications, as well as any information used as a basis for this decision, is accurate. Any inaccuracies found in this information may be grounds for nullification of these closure certifications and potential enforcement actions. The Owner/Operator must inform the Department of any deviations from or changes in the information provided which would affect the closure certifications for the above-referenced units.

Please be advised that this acknowledgment of hazardous waste facility closure is not a certification that your facility does not pose any environmental or public health threat. This letter does not remove any liabilities associated with past hazardous waste management practices which occurred on the site.

Mr. Donald E. Bossow
March 17, 1992
Page 2

If you have any questions, please contact Glenn Forman at
(818) 567-3111.

Sincerely,



Jose Kou
Branch Chief
Facilities Management Branch

cc: Mr. Paul Blais
Hazardous Waste Management Branch
Department of Toxic Substances Control
P. O. Box 806
Sacramento, CA 95812-0806

Mr. Tom Kelly
U.S. EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Mr. Edward J. Trospen
Kleinfelder, Inc.
17100 Pioneer Blvd., Suite 350
Artesia, CA 90701

Ms. Jo Nelson
Fees Unit
Department of Toxic Substances Control
P. O. Box 806
Sacramento, CA 95812-0806

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

1011 N. GRANDVIEW AVENUE

GLENDALE, CA 91201

(818) 551-2800

**M E M O R A N D U M**

(A)

TO: Miguel Monroy
Siobhan Wilder
File

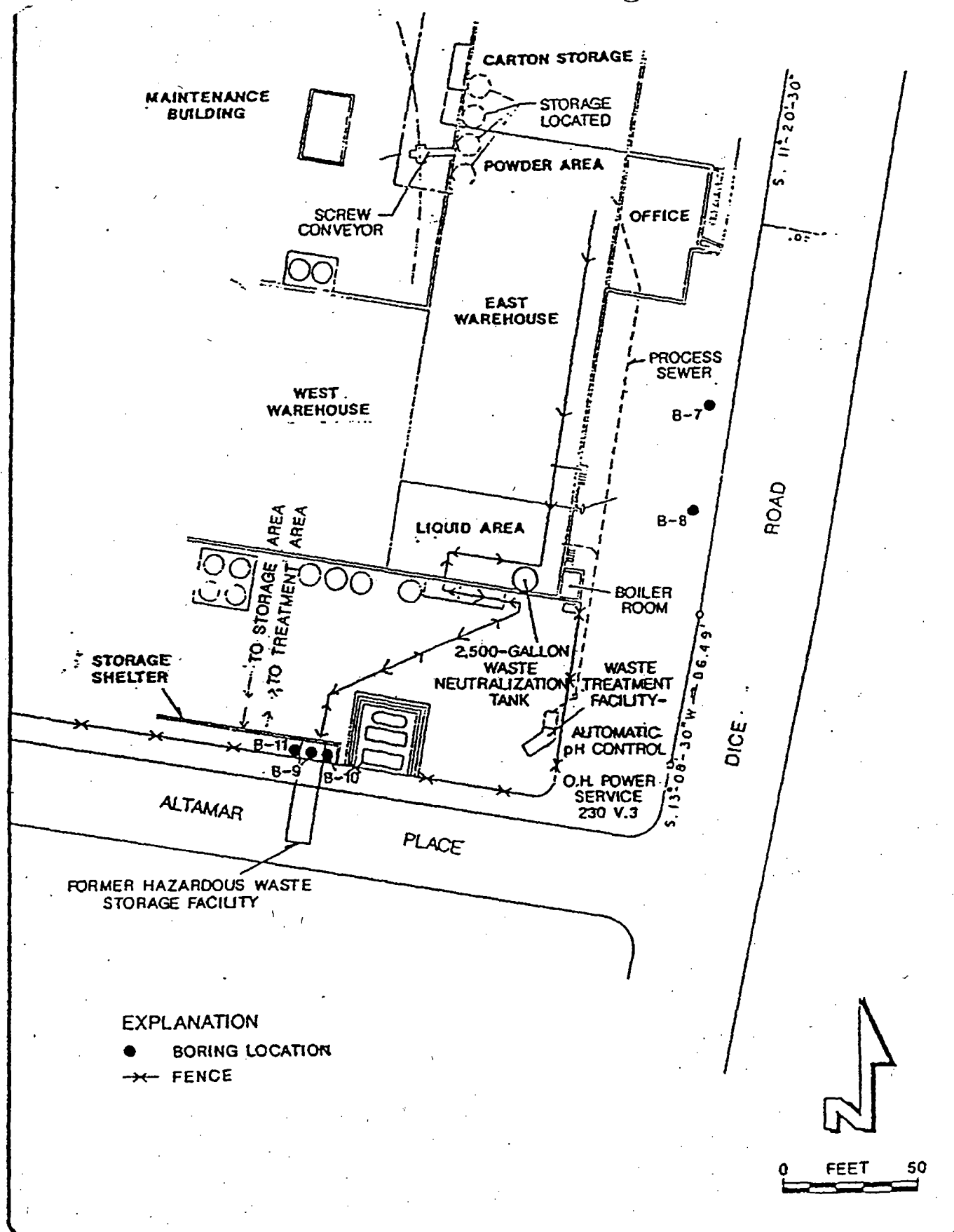
FROM: Shawn Haddad ~~SH~~

DATE: July 8, 1994

SUBJECT: DIVERSEY WYANDOTE CORPORATION (Diversey)

The Department of Toxic Substances Control (Department) has conducted a Site Screening Evaluation regarding the subject site located at 8921 S. Dice Road, Santa Fe Springs, CA. 90670. The Site is listed on the CalSites database which list sites contaminated with hazardous substances. Diversey was a RCRA regulated hazardous waste Management Facility. Diversey was certified closed by the Department in March 1992. Consequently, no further action is recommended under Site Mitigation Branch

CalSites Database will be updated to reflect the above information(redline).



DIVERSEY CORP.
Closure Report
Santa Fe Springs, California
Project: 50-1601-02 September 1991

**SITE PLAN WITH
WASTE UNIT LOCATIONS
AND BORING LOCATIONS**

FIGURE
3

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

1011 N. GRANDVIEW AVENUE
GLENDALE, CA 91201
(818) 551-2800

**M E M O R A N D U M**

(A)

TO: Miguel Monroy
Siobhan Wilder
File

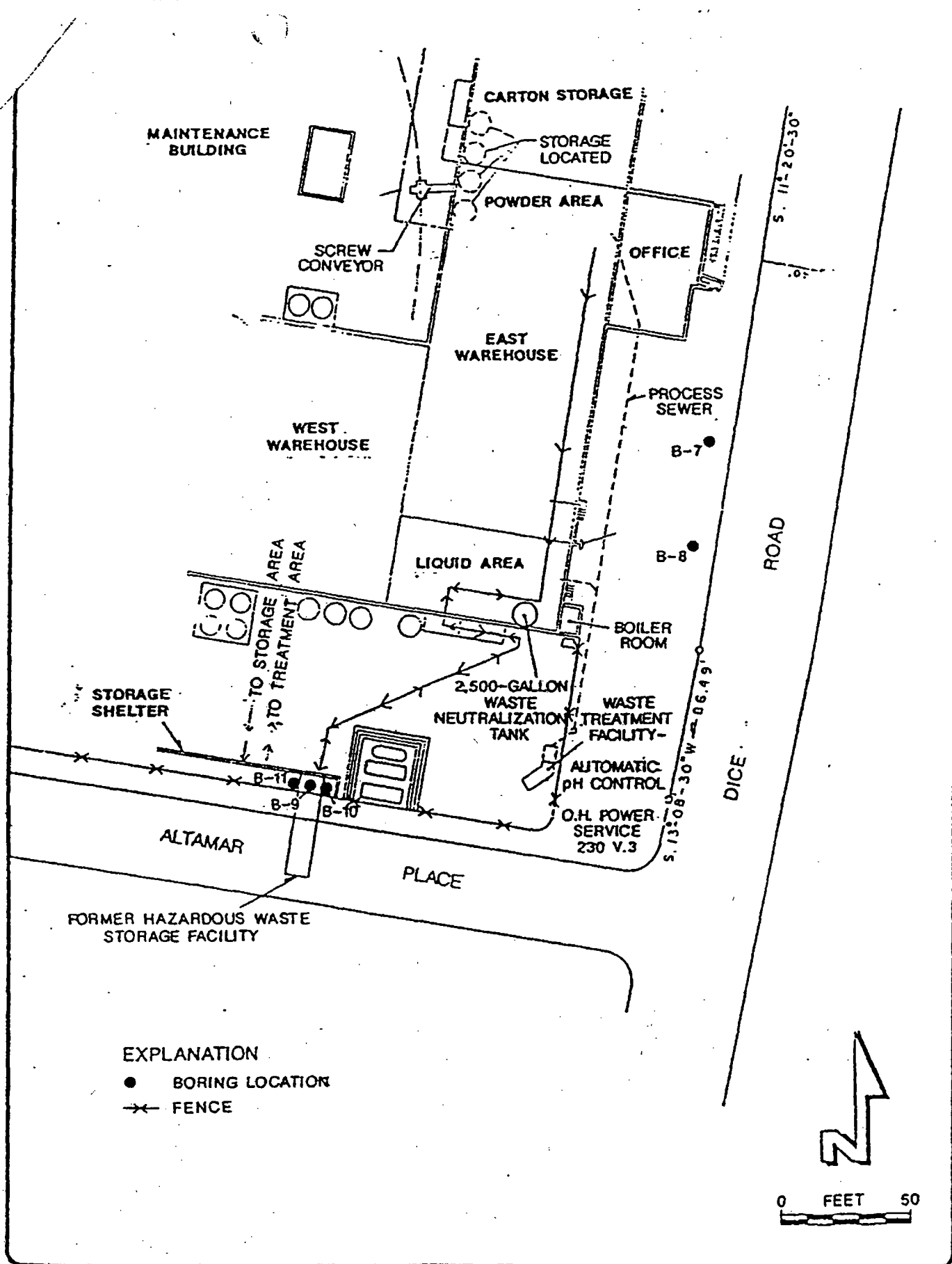
FROM: Shawn Haddad ~~SX~~

DATE: July 8, 1994

SUBJECT: DIVERSEY WYANDOTE CORPORATION (Diversey)

The Department of Toxic Substances Control (Department) has conducted a Site Screening Evaluation regarding the subject site located at 8921 S. Dice Road, Santa Fe Springs, CA. 90670. The Site is listed on the CalSites database which list sites contaminated with hazardous substances. Diversey was a RCRA regulated hazardous waste Management Facility. Diversey was certified closed by the Department in March 1992. Consequently, no further action is recommended under Site Mitigation Branch

CalSites Database will be updated to reflect the above information(redline).



DIVERSEY CORP.
Closure Report
Santa Fe Springs, California
Project: 50-1601-02 September 1991

**SITE PLAN WITH
WASTE UNIT LOCATIONS
AND BORING LOCATIONS**

**FIGURE
3**

Exhibit M



ENVIRONMENTAL STRATEGIES CORPORATION

226 Airport Parkway • Suite 630 • San Jose, California 95110 • (408) 453-6100 • Fax (408) 453-0496

September 11, 1998

Ms. Jenny Au
California Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, CA 91754

Re: Collection of Supplemental Soil Samples at the Former Diversey Corp.
Facility, 8921 Dice Road Santa Fe Springs, California

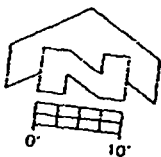
Dear Jenny:

Environmental Strategies Corporation (ESC) performed a supplemental soil investigation on behalf of Rathon Corp., at the above referenced facility. Buildings at the site have been demolished and foundations removed. Upon removal of the foundations, ESC observed saturated soil conditions adjacent to the former sump (area remediated using soil vapor extraction system) (Figure 1). On September 1, 1998, ESC collected two soil samples (SUP1 and SUP2), in this area, supplementing an investigation by SCS Engineers on August 21, 1998 investigation.

Each sample was collected by inserting decontaminated brass liners into the saturated soil, covering each end with Teflon tape, and capping, labeling, and hand delivering to a representative of Centrum Analytical Laboratories, a state certified laboratory, in Redlands, California. Each soil sample was analyzed for volatile organic compounds (VOCs), semivolatile VOCs, and total petroleum hydrocarbon (TPH) quantified as kerosene and fuel screen analysis by EPA Methods 8260, 8270, and 8015 modified, respectively. The chain-of-custody documentation and laboratory analytical data are enclosed.

Chlorinated VOCs were not detected in the soil samples. TPH quantified as motor oil and kerosene were detected at a concentration of 960 mg/kg, and 130 mg/kg respectively from SUP1. TPH quantified as motor oil and kerosene were detected at a concentration of 2,300 mg/kg, and 630 mg/kg respectively from SUP2 (Table 1).

The data collected from the supplemental investigation verified previous sampling results that indicated that neither chlorinated VOCs and semivolatile VOCs were present in any significant concentrations and that residual petroleum hydrocarbons exists within the soil



SECO
CONTAIN



6, 1997
1997

ENVIRONMENTAL STRATEGIES CORPORATION

101 METRO DRIVE, SUITE 850
SAN JOSE, CA. 95110

PREPARED FOR
FORMER DIVERSEY CORP.

8921 DICE ROAD
SANTA FE SPRINGS, CA

NOVEMBER 24, 1997 SOIL INVESTIGATION

SCALE: 1" = 20'	APPROVED BY CITY ENGINEER _____	DATE _____
DESIGNED: S.D.	C.T.K. INC. CIVIL ENGINEERS AND LAND SURVEYORS 8880 BENSON AVENUE SUITE 100 MONTCLAIR, CA 91736 (909) 948-1791	JOB NUMBER 97-04721
DRAWN: S.D.		FILE NUMBER 4721/TOPOD.DWG
CHECKED: C.T.M.	<i>Carl T. Kossick, Jr.</i> PROJECT ENGINEER	DATE 12/27/97 SHEET 1 of 1

Table 1
Summary of Soil Samples Collected September 1, 1998
Former Diversey Corp. Facility
8921 Dice Road, Santa Fe Springs, California (a)

<u>Compounds</u>	<u>SUP1</u>	<u>SUP2</u>
EPA 8260 (VOCs)		
Ethylbenzene	0.005	ND<0.005
Isopropylbenzene	0.12	0.061
Napthalene	0.06	0.04
n-Propylbenzene	0.013	0.037
1,2,4-Trimethylbenzene	0.15	0.088
1,3,5-Trimethylbenzene	0.062	0.037
Xylenes (total)	0.017	ND<0.015
n-Butylbenzene	0.03	0.01
sec-Butylbenzene	0.11	0.07
tert-Butylbenzene	0.02	0.01
EPA 8270 (Semi-VOCs)		
2-Methylnaphthalene	0.40	0.58
EPA 8015 (Fuel Screen)		
Kerosene	130	630
Motor Oil	960	2,300

a/ mg/kg



PRELIMINARY RESULTS
SUBJECT TO CHANGE
PENDING QA/QC REVIEW

Modified 8015 - Fuel Screen

Client: Environmental Strategies
Project: Diversy Santa Fe Road
Job No.: 13588
Matrix: Soil
Analyst: NG

Date Sampled: 09/01/98
Date Received: 09/01/98
Date Extracted: 09/01/98
Date Analyzed: 9/01,02/1998
Batch Number: 8015DS1390

Fuel Identified:	Kerosene	Motor Oil	Detection Limits
Units:	mg/kg	mg/kg	mg/kg
Blank	ND	ND	10
Sup 1	130	630	10
Sup 2	960	2,300	100

EPA 8270 Semivolatile Organics

Client: Environmental Strategies
Project: Diversy Santa Fe Road
Job No.: 13588
Matrix: Soil
Analyst: TPW

Date Sampled: 09/01/98
Date Received: 09/01/98
Date Extracted: 09/02/98
Dates Analyzed: 09/04/98
Batch Number: 8270S0433

Compound	Sample ID: DL	Blank mg/Kg	Sup 1 mg/Kg	Sup 2 mg/Kg
2,6-Dinitrotoluene	0.99	ND	ND	ND
Fluoranthene	0.33	ND	ND	ND
Fluorene	0.33	ND	ND	ND
Hexachlorobenzene	0.33	ND	ND	ND
Hexachlorobutadiene	0.33	ND	ND	ND
Hexachlorocyclopentadiene	16	ND	ND	ND
Hexachloroethane	0.33	ND	ND	ND
Indeno[1,2,3-c,d]pyrene	1.3	ND	ND	ND
Isophorone	0.33	ND	ND	ND
2-Methylnaphthalene	0.33	ND	0.40	0.58
2-Methylphenol	1.6	ND	ND	ND
4-Methylphenol	1.6	ND	ND	ND
N-Nitrosodi-n-propylamine	0.33	ND	ND	ND
N-Nitrosodiphenylamine	0.33	ND	ND	ND
Naphthalene	0.33	ND	ND	ND
2-Nitroaniline	0.99	ND	ND	ND
3-Nitroaniline	0.99	ND	ND	ND
4-Nitroaniline	3.3	ND	ND	ND
Nitrobenzene	0.99	ND	ND	ND
2-Nitrophenol	1.3	ND	ND	ND
4-Nitrophenol	3.3	ND	ND	ND
Pentachlorophenol	16	ND	ND	ND
Phenanthrene	0.66	ND	ND	ND
Phenol	1.3	ND	ND	ND
Pyrene	0.33	ND	ND	ND
1,2,4-Trichlorobenzene	0.33	ND	ND	ND
2,4,5-Trichlorophenol	2	ND	ND	ND
2,4,6-Trichlorophenol	3.3	ND	ND	ND

PRELIMINARY RESULTS
SUBJECT TO CHANGE
PENDING QA/QC REVIEW

Surrogates (Limits) in Percent Recovery

Surrogate	Sample ID: Blank	Sup 1	Sup 2
2-Fluorophenol (25 - 121%)	90	89	89
Phenol-D5 (24 - 113%)	80	81	81
Nitrobenzene-D5 (23 - 120%)	54	76	76
2-Fluorobiphenyl (30 - 115%)	85	87	87
2,4,6-Tribromophenol (19 - 122%)	83	102	102
p-Terphenyl-D14 (18 - 137%)	95	99	99

Exhibit N

September 23, 1998

Richard E. Freudenberger
Environmental Strategies Corp.
101 Metro Drive, Suite 650
San Jose, CA 95110

FORMER DIVERSEY CORP. - 8921 DICE ROAD, SANTA FE SPRINGS - (FILE NO. 97-092)

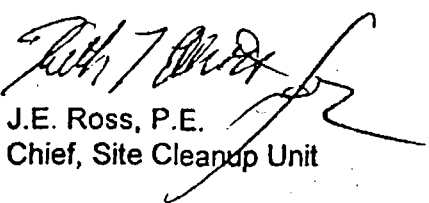
We have reviewed your Supplemental Soil Samples Collection Report, dated September 11, 1998, SCS's Soil Sampling/Analysis Summary Report, dated September 10, 1998, and SCS's Phase I Environmental Assessment Report, dated May 1998, for the above-mentioned site.

Liquid cleaning compounds, insecticides, and antifreeze were formerly manufactured at this site. According to the Phase I, "kerosene was used as the primary feedstock material for the detergent manufacturing process that operated at the subject property."

Site assessment data indicate that subsurface soil has been impacted with kerosene and the groundwater has been impacted with both kerosene and chlorinated volatile organic compounds (VOCs). Soil vapor extraction and free product removal were implemented to remediate the kerosene impacted soil and groundwater.

Based upon the information submitted, we concur with your and SCS's findings that the site does not appear to be a source for the chlorinated VOCs detected in the groundwater. Therefore, we require no further action at this site with regards to the chlorinated VOCs identified in the groundwater. Please note that this does not relieve Rathon of the responsibility to replace MW-4 and continue to monitor the groundwater for the kerosene related issue.

If you have any questions regarding this matter, please contact Ms. Jenny M. Au at (213)266-7576.



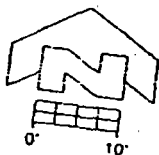
J.E. Ross, P.E.
Chief, Site Cleanup Unit

cc: Tom Dong, SCS Engineers

California Environmental Protection Agency



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.



FORMER DIVERSEY CORP. WAREHOUSE

LOCATION OF FORMER
SUMP AND
SOIL VAPOR
EXTRACTION UNIT

SECONDARY
CONTAINMENT

SB

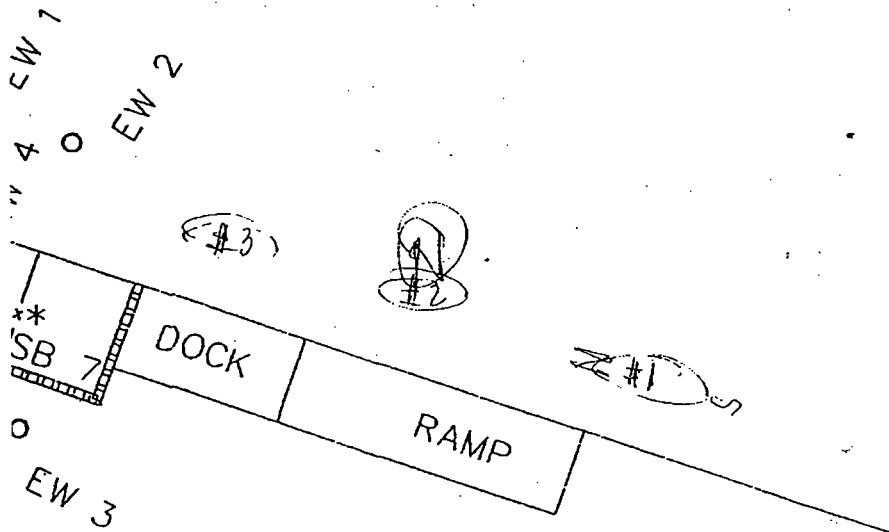
SB 6 *

SB 2

MW 3

SB 1
* SB 4

Soil - distinct dark
 - moist
 - slight odor
 'alcohol'



2
 SB 3



LEGEND:

- SB * = SOIL BORING NOVEMBER 24, 1997
- SB ♦ = SOIL BORING OCTOBER 10, 1997
- MW • = MONITORING WELL
- EW ○ = EXTRACTION WELL

ENVIRONMENTAL STRATEGIES CORPORATION 101 METRO DRIVE, SUITE 650 SAN JOSE, CA. 95110			
PREPARED FOR FORMER DIVERSEY CORP. 8921 DICE ROAD SANTA FE SPRINGS, CA			
NOVEMBER 24, 1997 SOIL INVESTIGATION			
SCALE: 1" = 20'	APPROVED BY CITY ENGINEER	DATE	
DESIGNED: S.D.	C.T.K. INC. CIVIL ENGINEERS AND LAND SURVEYORS 8880 BENSON AVENUE SUITE 100 MONTCLAIR, CA 91736 (909) 948-1791		JOB NUMBER 97-04721
DRAWN: S.D.	CHECKED: C.T.K.		FILE NUMBER 17211.TPOD.DWG
PROJECT ENGINEER RE. 71669			SHEET 1 of 1

BENCHMARK # DY 6667 ELEV. 152.938

* T IN EAST CURB NORKWALK BLVD.
 * EAST OF CENTERLINE ON THE
 INTERLINE PROOF OF BURKE STREET

NO.	DESCRIPTION	DATE	BY

REVISIONS

Southern California Laboratory

Analysis Request Form

Name of Sampler: <u>Jimmy No</u>		Phone No: (ATSS) <u>(323)-266-896</u>	
Sampler Employed By: R.W.Q.C.Board No. : <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9			
Sample Source: <u>Diversey, SFS</u>			
Date Collected : <u>8/12/98</u>		Analysis Task No. _____	
Sample Type : <input type="checkbox"/> Drinking water : <input type="checkbox"/> Ground water <input type="checkbox"/> Surface water <input type="checkbox"/> Waste water : Chlorinated : <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Solid sample : <input checked="" type="checkbox"/> Soil <input type="checkbox"/> Sludge <input type="checkbox"/> Sediment <input type="checkbox"/> Other			
Use your own Bottle ID. No. for each bottle.			
For Lab use Log Number	Bottle ID. No.	Sampling Point	Type of Analysis required (Be Specific)
888 2874	2N	Former Warehouse, 2N	VOCs, SVOCs, metals
			8290
			Metals - lead, copper,
			arsenic, chromium.
Warning or Special Instruction on Samples :			
Seals: <input type="checkbox"/> Intact <input type="checkbox"/> None <input type="checkbox"/> Broken		Date	Time
Samples Relinquished by <u>[Signature]</u>		8/13/98	10:50
Samples Relinquished by			
Received for Lab by <u>C. Bernardo</u>		8/13/98	10:50 AM

(For Lab use only) Total cost for Lab analyses :

\$ 930

 RECEIVED
 98 OCT 30 PM : 45
 CALIFORNIA REGIONAL WATER
 QUALITY CONTROL BOARD
 LOS ANGELES REGION

Calif. State Dept. of Health Services
Div. of Drinking Water & Environ. Management-SRL(South)
Volatile Organic Chemicals

LAB SAMPLE ID NO.: 808-2874

DATE REPORTED : 8/14/98

METHOD USED : EPA 8260 [X] Low Level [] High Level

All reporting units = ug/kg (ppb)

ND = None Detected

page 2 of 2

ANALYTE	STORET CODE	ANALYSIS RESULTS	REPORTING LIMIT
Ethyl benzene	34371	ND	10
Ethylene dibromide (EDB)	77651	ND	10
Hexachlorobutadiene	34391	ND	10
Isopropylbenzene (Cumene 77356)	77223	ND	10
p-Isopropyltoluene (p-Cymene)	A-011	ND	10
Methylene chloride (Dichloromethane)	34423	ND	10
Methyl Ethyl Ketone	81595	ND	100
Methyl Isobutyl Ketone	81596	ND	100
Methyl tert-Butyl Ether (MTBE)	A-030	ND	10
Naphthalene	34696	ND	10
n-Propylbenzene	77224	ND	10
Styrene	77128	ND	10
1,1,1,2-Tetrachloroethane	77562	ND	10
1,1,2,2-Tetrachloroethane	34516	ND	10
Tetrachloroethylene (PCE)	34475	ND	10
Toluene	34010	ND	10
1,2,3-Trichlorobenzene	77613	ND	10
1,2,4-Trichlorobenzene	34551	ND	10
1,1,1-Trichloroethane (1,1,1-TCA)	34506	ND	10
1,1,2-Trichloroethane (1,1,2-TCA)	34511	ND	10
Trichloroethylene (TCE)	39180	ND	10
1,2,3-Trichloropropane	77443	ND	10
Trichlorofluoromethane (Freon 11)	34488	ND	10
1,2,4-Trimethylbenzene	77222	ND	10
1,3,5-Trimethylbenzene	77226	ND	10
1,1,2-Trichloro-trifluoroethane (Freon 113)	81611	ND	10
Vinyl chloride (VC)	39175	ND	10
m,p-Xylenes	A-014	ND	10
o-Xylene	77135	ND	10

Calif. State Dept. of Health Services
Div. of Drinking Water & Environ. Management-SRL(South)
Volatile Organic Chemicals

LAB SAMPLE ID NO.: 808-2874

DATE REPORTED : 8/14/98

METHOD USED : EPA 8260 [X] Low Level [] High Level

All reporting units = ug/kg (ppb)

ND = None Detected

page 1 of 2

ANALYTE	STORET CODE	ANALYSIS RESULTS	REPORTING LIMIT
Benzene	34030	ND	10
Bromobenzene	81555	ND	10
Bromochloromethane	A-012	ND	10
Bromodichloromethane	32101	ND	10
Bromoform	32104	ND	10
Bromomethane (Methyl bromide)	34413	ND	10
n-Butylbenzene	A-010	ND	10
sec-Butylbenzene	77350	ND	10
tert-Butylbenzene	77353	ND	10
Carbon tetrachloride	32102	ND	10
Chlorobenzene (Monochlorobenzene)	34301	ND	10
Chloroethane	34311	ND	10
Chloroform	32106	ND	10
Chloromethane (Methyl Chloride)	34418	ND	10
o-Chlorotoluene (2-Chlorotoluene)	A-008	ND	10
p-Chlorotoluene (4-Chlorotoluene)	A-009	ND	10
Dibromochloromethane	32105	ND	10
Dibromomethane	77596	ND	10
1,2-Dichlorobenzene (o-DCB)	34536	ND	10
1,3-Dichlorobenzene (m-DCB)	34566	ND	10
1,4-Dichlorobenzene (p-DCB)	34571	ND	10
Dichlorodifluoromethane (Freon 12)	34668	ND	10
1,1-Dichloroethane (1,1-DCA)	34496	ND	10
1,2-Dichloroethane (1,2-DCA)	34531	ND	10
1,1-Dichloroethylene (1,1-DCE)	34501	ND	10
cis-1,2-Dichloroethylene	77093	ND	10
trans-1,2-Dichloroethylene	34546	ND	10
1,2-Dichloropropane	34541	ND	10
1,3-Dichloropropane	77173	ND	10
2,2-Dichloropropane	77170	ND	10
1,1-Dichloropropylene	77168	ND	10
cis- & trans-1,3-Dichloropropylene	34561	ND	10

Calif. State Dept. of Health Services
Div. of Drinking Water & Environ. Management-SRL(South)
Base/Neutral & Acid Extractables

LAB SAMPLE ID NO.: 808-2874

DATE REPORTED : 8/20/98

METHOD USED : EPA 8270

All reporting units = mg/kg (ppm)

ND = None Detected

Base/Neutral Extractables

page 1 of 3

ANALYTE	STORET CODE	ANALYSIS RESULTS	REPORTING LIMIT
Acenaphthene	34205	ND	1.2
Acenaphthylene	34200	ND	1.2
Anthracene	34220	ND	1.2
Aldrin	39330	ND	2.5
Benzo(a)anthracene	34526	ND	1.2
Benzo(b)fluoranthene	34230	ND	1.2
Benzo(k)fluoranthene	34242	ND	1.2
Benzo(a)pyrene	34247	ND	1.2
Benzo(ghi)perylene	34521	ND	1.2
Benzyl butyl phthalate	34292	ND	1.2
β-BHC	39338	ND	2.5
α-BHC	34259	ND	2.5
Bis(2-chloroethyl)ether	34273	ND	1.2
Bis(2-chloroethoxy)methane	34278	ND	1.2
Bis(2-ethylhexyl)phthalate	39100	ND	2.5
Bis(2-chloroisopropyl)ether	34283	ND	1.2
4-Bromophenyl phenyl ether	34636	ND	1.2
Chlordane	39350	ND	25
2-Chloronaphthalene	34581	ND	1.2
4-Chlorophenyl phenyl ether	34641	ND	1.2
Chrysene	34320	ND	1.2
4,4'-DDD	39310	ND	2.5
4,4'-DDE	39320	ND	2.5
4,4'-DDT	39300	ND	2.5
Dibenzo(a,h)anthracene	34556	ND	1.2
Di-n-butylphthalate	39110	ND	1.2
1,3-Dichlorobenzene	34566	ND	1.2
1,2-Dichlorobenzene	34536	ND	1.2
1,4-Dichlorobenzene	34571	ND	1.2
3,3'-Dichlorobenzidine	34631	ND	2.5
Dieldrin	39380	ND	2.5

Calif. State Dept. of Health Services
Div. of Drinking Water & Environ. Management-SRL(South)
Base/Neutral & Acid Extractables

LAB SAMPLE ID NO.: 808-2874

DATE REPORTED : 8/20/98

METHOD USED : EPA 8270

All reporting units = mg/kg (ppm)

ND = None Detected

Base/Neutral Extractables

page 2 of 3

ANALYTE	STORET CODE	ANALYSIS RESULTS	REPORTING LIMIT
Diethyl phthalate	34336	ND	1.2
Dimethyl phthalate	34341	ND	1.2
2,4-Dinitrotoluene	34611	ND	1.2
2,6-Dinitrotoluene	34626	ND	1.2
Di-n-octylphthalate	34596	ND	1.2
Endosulfan sulfate	34351	ND	2.5
Endrin aldehyde	34366	ND	2.5
Fluoranthene	34376	ND	1.2
Fluorene	34381	ND	1.2
Heptachlor	39410	ND	2.5
Heptachlor epoxide	39420	ND	2.5
Hexachlorobenzene	39700	ND	1.2
Hexachlorobutadiene	34391	ND	1.2
Hexachloroethane	34396	ND	1.2
Indeno(1,2,3-cd)pyrene	34403	ND	1.2
Isophorone	34408	ND	1.2
Naphthalene	34696	ND	1.2
Nitrobenzene	34447	ND	1.2
N-Nitrosodi-n-propylamine	34428	ND	1.2
PCB-1016	34671	ND	25
PCB-1221	39488	ND	25
PCB-1232	39492	ND	25
PCB-1242	39496	ND	25
PCB-1248	39500	ND	25
PCB-1254	39504	ND	25
PCB-1260	39508	ND	25
Phenanthrene	34461	ND	1.2
Pyrene	34469	ND	1.2
Toxaphene	39400	ND	50
1,2,4-Trichlorobenzene	34551	ND	1.2

[illegible]

California State Department of Health Services
Division of Drinking Water & Environmental Management - SRL (South)
Inorganic chemicals - Trace metals

LAB SAMPLE ID NO.:808-2874

Analyst: C. Lacebal

DATE REPORTED :10/28/98

TYPE OF TEST : TTLC

All reporting units = mg/Kg (ppm)

N.D. = None detected

Analyzed (Check)	CONSTITUENT		ANALYSIS RESULTS	REPORTING LIMITS
	Ag	Silver		5
	Al	Aluminum		10
✓	As	Arsenic	< R.L.	10
	Ba	Barium		100
	Be	Beryllium		0.8
	Cd	Cadmium		1
	Co	Cobalt		80
✓	Cr	Chromium	< R.L.	50
	Cr+6	Hexaval.Chromium		5
✓	Cu	Copper	< R.L.	25
	Hg	Mercury		0.2
	Mo	Molybdenum		350
	Ni	Nickel		20
✓	Pb	Lead	11	5
	Sb	Antimony		50
	Se	Selenium		1
	Tl	Thallium		7
	Zn	Zinc		250
	V	Vanadium		24